Modern packaging



Nominated for Packagings Hall of Fame. Story on Page 88.

November 1951

"you name it ... I helped make it?"



Glue that says, "Stop"

Something else I've learned to do. Use glue as a barrier. To protect overseas defense shipments. Against the frozen arctic. Sweating tropics. Rain, sea water, chemical vapors. I help make special wrapping material and heat-sealed bags. By gluing together combinations of vinyl chloride, foil, polyethylene, scrim cloth. Layer on layer. Barrier glue has to be tough, flexible. To withstand government tests for bursting strength, tearing, submersion, vapor, temperature extremes, rough handling. For all protected shipments. From delicate surgical instruments to wood-crated turbines.

... it's another reason why I'm an essential industry.

• "you name it . . . I helped make it!" Think of other defense needs. Artillery shells. Small arms ammunition. Replacement parts for guns, tanks, planes. Field rations. Special glues again. And medical supplies require non-toxic, chemical-resistant adhesives that meet rigid drug and pharmaceutical codes. The NATIONAL touch is everywhere. Glue applied through imaginative research and service. To every item of defense and daily life.

STARCHES



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A single series of adhesives can handle any or all of these laminations, including those required in various U. S. GOVERNMENT SPECIFICATIONS.

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TO FOIL. FOR HEAT-SEALED ENVELOPE (U. S. GOVI. Spec. MIL-C-1019B, JAN-F-1034, MIL-B-1112A, MIL-R-1504, MIL-R-2406, MIL-F-2409, MIL-F-2413) TO PAPER TO BOARD TO RAYON THREAD FOR MAKING RIBBONS

MAKING RIBBONS
TO CELLULOSE ACETATE, AS
SCRIM REINFORCING FOR
GLASS SUBSTITUTE (Chicken
Coop Windows)

CELLOPHANE

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TO PAPER
TO BOARD
TO GLASSINE (U. S. Govt. Spec.
MIL-C-10022)

(Plain and Moisture Proof)

TO FOIL (U. S. Govt. Spec. MIL-C-10022 and MIL-C-10928)

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TO DRY WAXED SULPHITE PAPER OR GLASSINE (U. S. Govt. Spec. MIL-C-10022)

ARAN

TO PAPER TO BOARD

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Our Technical Service Department will be glad to work with you on any of the laminations listed above . . . or on special combinations. Send a brief description of your problem to:

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PAPERBOARD

FOLDING CARTONS

SHIPPING CONTAINERS

NOVEMBER 1951

Modern packaging

Vol. 2

No. 3

November 1951

General

- The perennial shoe box
 Its long-neglected surfaces are at last being turned into a useful advertising medium.
- Cohesive paper
 A new package-sealing principle: coated surfaces that adhere to each other with pressure alone—but stick to nothing else.
- 'Name' appeal 85 "Preferred at Stork Club" toiletry packages bring cafe-society glamour to drug stores.
- Cracker Jack premiums

 Tiny favors are now protectively wrapped by low-cost machine methods.
- Dr. Lyon's Tooth Powder

 This nominee to Packaging's Hall of Fame,
 85 years old, conceived package features that
 launched the dentifrice industry and had a
 profound effect on all packaging.
- Design Histories 94
 Self-service butter carton for ¼-lb. prints . . . a new French package that protects velvet ribbon . . . automatic pack for cuffs.
- Mechanized for crackers 96
 Johnston's completely automatic packaging reduces labor and materials cost.
- Packaging Pageant
 Pictorial design for coffee can . . . gear cutter in plastic box . . . colorful cloth bags that sell bird seed . . . other ideas.
- Fluid on wheels

 Movable tanks get liquids to packaging line
 in "world's most modern pharmaceuticalmanufacturing plant." By S. J. Paradiso.

Index to Volume 24 now ready

The Index to contents of Volume 24 of Modern Packaging (Sept., 1950, through Aug., 1951) is now available, but will be sent to subscribers only on request. Address requests to the Editorial Dept., Modern Packaging, 575 Madison Ave., New York 22.

- Saddling the bag

 New machine delivers printed and imprinted labels ready to apply to bag tops.
- Ehlers re-tailored

 New family design for old established brand
 reaffirms that in unity there is strength.
- Drugs in plastics

 Miniature acetate and polystyrene containers
 for samples are efficient, attractive.
- Display Gallery

 Life-sized motion unit for two Sunny Brook liquors . . . auto spotlight in combination display-shipper . . . other new sales aids.
- Stronger Campbell's

 Redesign of famous label achieves bolder identity with almost-unnoticeable changes.
- Packaging Institute report

 A summary of discussions at the 13th Annual
 Forum, dealing with questions of packaging
 in a controlled economy.

Technical

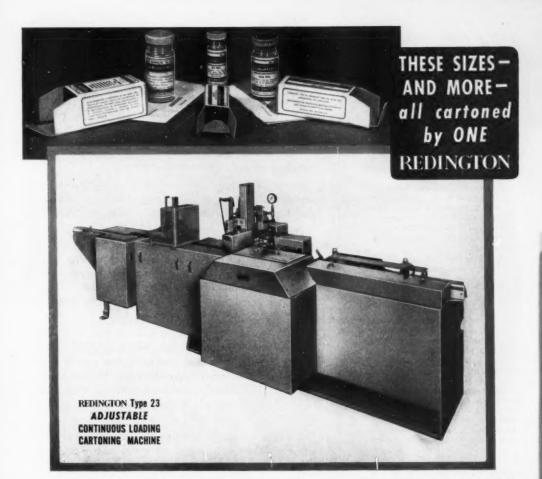
- Methods of rating film durability 129
 A discussion of instruments and procedures for measuring flex life, impact strength and tear strength. By D. W. FLERE.
- Design factors in blow-molded plastic bottles—II 132

 Considerations in choice of closures and liners, spray fittings and surface decoration details. By I. H. Parliman.

Questions and Answers 136

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Parke, Davis & Co., of Detroit, handles two more vials and another carton size, in addition to those shown here, on a single REDINGTON machine. Adjusting for changes when necessary is simple, quick — production flows right along with a minimum of down-time. Here's how the REDINGTON handles this cartoning job for Parke, Davis economically and fast:

Collapsed cartons are stacked in the carton magazine. Filled, capped and labeled vials, standing upright, are fed into the machine on the intake conveyor. The machine then places them horizontally in article conveyor pockets. As each filled pocket passes the magazine, the machine feeds out a carton, opens and

forms it, inserts the vial, and closes the carton by tucking in the end flaps. A skip carton mechanism prevents feeding if an empty pocket should approach the filling station.

When a circular is to be included in the package, one is automatically fed from the prefolded stack in the circular magazine and folded once the long way to a dimension of $\frac{7}{6}$ " x $\frac{41}{2}$ ". The machine then places it over the top of the vial with ends extending down the sides, and inserts the assembly into the carton at the proper point. carton at the proper point.

The whole operation is performed at high speed. And, of course, such famous REDINGTON construction details as one-piece cast iron frame, self-aligning roller bearings and other features assure long and trouble-free service-life of the machine.

★ UNUSUAL PROBLEMS do not baffle REDINGTON engineers. They have successfully dealt with the hard-to-crack kind in almost every packaging field, from codfish to penpoints. Whether your volume is large or small, call us in for consultation . . . our experience is at your disposal.

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NOVEMBER 1951

Modern packaging

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MODERN PACKAGING is regularly indexed in the Industrial Arts Index.

EDITORIAL

Where are the shortages?

THERE IS DANGER TODAY that package buyers may slip into the careless attitude of Aesop's workers who, warned too often, refused to believe there was a wolf.

Instead of the "real pinch" of shortages which had been expected about this time, package users are so well supplied that there is an evident easing in demand for nearly all types of containers.

Far from turning away orders, makers of folding and setup boxes are scouting for business. Stock piles of paper board, already high, are growing higher as box orders fall off. This backs up to the waste-paper market: Chicago prices for mixed waste paper have dropped from \$33 to \$12

The pinch in polyethylene is so much less severe than expected that the industry committee makes bold to suggest to NPA that increased production now coming in be allotted to civilian rather than military uses. The percentages of polyethylene actually consumed by defense in the latest reported month was only slightly more than the 40% increase in resin output that is due by January.

Even the cellophane shortage—the granddaddy of them all—seems likely to be wiped out by the end of this year.

Similar shiftings of supply-demand balances are reported in other categories of materials.

Why is this so? Where are the shortages?

The basic fact is that the nation's armament program is lagging perhaps six months behind schedule and civilian shortages have been correspondingly delayed. The deceptive appearance of plenty is compounded by the fact that, all through the chain of manufacture and distribution, supply bins have been loaded against the spectre of impending shortage and when shortage fails to operate on schedule there is only one thing to do—shut off the supply valve.

But to regard this as anything more than a temporary respite, would, we think, be extreme foolishness. Unless there is a decided change in the nation's charted course, real shortages are, inevitably, just around the corner.

The Editors





Just as the gardener's magic touch makes plants grow, Dobeckmun's *Green Thumb* grows sales. We mean the ingenuity and skill that creates a package with powerful sales impact, always, of course, with the desired protection for product quality.

For instance, the Sto-away overwrap, with appetizing picture, sparkles with eye-appeal even in crowded self-service cabinets. Sales went up 450% when this package was first introduced.

Ruetenik Gardens' lettuce bag, of brilliantly printed transparent film, displays product freshness and quality . . . and reduces waste by 30% or more.

"Freshie" Soluble Fruit Flavors retain their fresh taste in moisture-proof, air-tight Metalam lamination of film and foil. This package combines protection plus attractive appearance that sells.

We'll gladly show you many examples that prove the selling power of Dobeckmun packages. Whether your products call for transparent bags, overwraps or the permanent protection of Metalam, the Dobeckmun Green Thumb will apply that extra touch that makes sales grow. Ask for suggestions.

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Cleveland 1, Ohio. Berkeley 2, Calif. Bennington, Vt.



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Shown have are just a few of the many types of failding cortons and other packages that Ritchie can create and produce to most your requirements.



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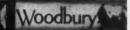
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NO TRUMP

CASTILE

CONVERTERS AND PRINTERS OF CELLOPHANE, TRALON, PLIOFILM, PLASTICS, ACETATES, FOIL AND GLASSINE



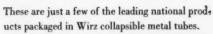
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Since Horrocks-Ibbotson Company of Utica, N. Y. manufacturers of fishing tackle since 1812—chose a Tri-State Rigid Plastic Box for their Ambassador Fly Lines, sales of this item have increased 40 per cent.

H-I Ambassador Lines are more popular with fishermen, because in gleaming, transparent Tri-State Boxes the merchandise is completely visible for their examination, yet protected against moisture and humidity by the water-tight, snug-hugging plastic lid. Fishermen rise, too, to the bonus feature of these Ambassador Line containers—ideally reusable for holding flies, plugs, and assorted tackle of every kind.

There's a transparent rigid plastic showcase box for your specialty item also. To increase sales, to preserve quality, or to simplify your packaging and merchandising operations—follow the lead of the nation's foremost packagers of foods, confections, class and mass merchandise of every kind. Package in rigid plastic! You may select a beautiful Tri-State Rigid Plastic Box from our wide range of stock sizes and shapes, or we will mold to your specifications.



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POINT-OF-COMBAT



In World War II, Reynolds pioneered revolutionary methods of military packaging with foil-laminated, heat-sealing materials...including what was then called the "flexible can." The requirements of today's highly mobile ground troops and supersonic air fleets are even more exacting. Yet with every new problem, Reynolds Aluminum Foil Packaging stands out as the supreme protection against moisture-vapor, water, light, heat, cold and the rigors of air drops such as you see pictured on the left.

Besides superior protection of rations, medical supplies and vital materiel from point-of-shipment to point-of-combat, Reynolds "fighting foil" offers important advantages in time-saving and labor-saving...both in the packaging process and in unpacking for quick field use. Individual problems are bringing out new and valuable military packaging solutions almost every day. To be sure you are in step with the latest developments, keep in touch with your nearest Reynolds representative. He will be glad to serve you.

POINTING AHEAD

In Reynolds Packaging Development Laboratories at Richmond, Virginia, hundreds of experiments are going on constantly to improve adhesives, laminations, materials, more efficient machine operation, in order to give your package the utmost in protection, economy and selling quality. This research help, as well as designing and sales engineering service are at your disposal for any military or civilian packaging problem.

REYNOLDS METALS COMPANY
Sales offices in principal cities. Or address Reynolds Metals Company,
Packaging Market Sales,
2500 South Third Street, Louisville 1, Ky.



REYNOLDS

AND POINT-OF-SALE

Out of Reynolds military packaging developments have come many improvements now being applied with new advantage to the "civilian defense" of foods and all perishable goods. There is no more dramatic example of this than in the cookie industry, where Reynolds "fighting foil" is saving millions of dollars in spoilage and returns.

Aside from protection of product quality, aluminum foil adds unique selling power... the irresistible eye-appeal of rich colors on bright metal. It is this shopper-stopper display value that makes Reynolds the ultimate in merchandising promotion at point-of-sale...the "brightest salesman" in this supermarket age.

Reynolds, leader in protective foil packaging, is also the leader in making the most of this "brightest salesman." Research technicians, packaging engineers, design specialists will gladly work with you in your future planning. Call any Reynolds Office. You'll be signing up the salesman with a top record in every line from beer to chewing gum... Reynolds Aluminum!



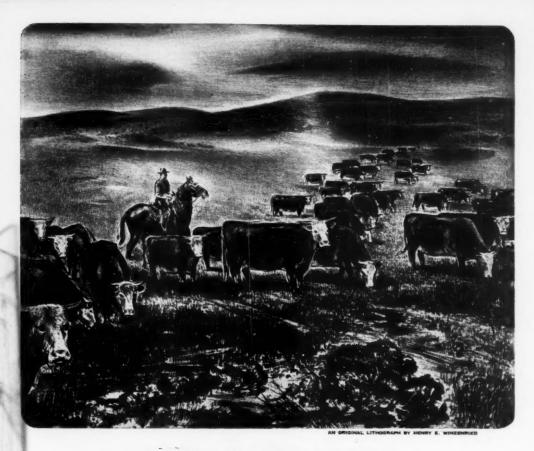


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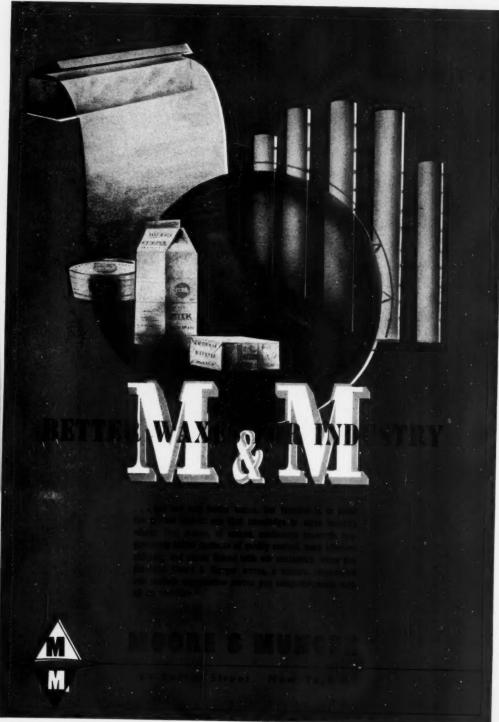
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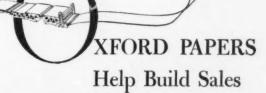




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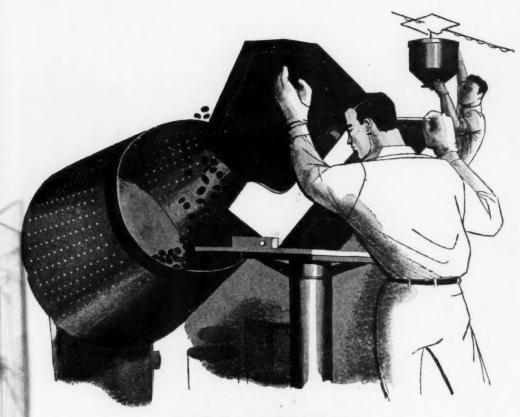






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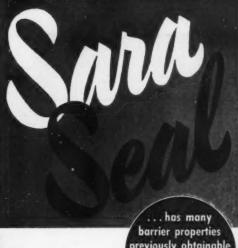
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Top quality printing... top quality cartons...

Once through the press!

This one operation rotary carton press by Champlain handles roll stock up to 28 points in thickness, steps up production as much as 50%.

The punch uses low cost steel rule and furniture dies, gives platen press quality scores at better than cylinder press speeds. The rotogravure press can coat, varnish, print with metallic and gloss inks as well as standard gravure inks. Printing and cutting registration is provided by electric push button control — or automatic registration at high speeds can be provided by Champlain electric eye control. Write today for complete information on top quality printing, cutting, automatic stripping of folding cartons... once through the press.

€D 7455

Carton Blanks...economically at high speeds for long-run production



Custom-built, this Champlain Rotary Carton Press will repay its cost to the average heavy producer of cartons in a very short time. The Rotary Cutter and Creaser is available with the Champlain Rotogravure, Rotary Letterpress and Aniline-Anilox units. Finished carton blanks are produced from roll stock in any number of colors, in glossy inks or varnished, scored, cut and stripped at speeds as high as 500 feet per minute. Ask Champlain for the answer to high-speed, low-cost carton production.



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88 LLEWELLYN AVENUE, BLOOMFIELD, N. J. CHICAGO OFFICE: 7 W. MADISON 51., CHICAGO 2, ILL. Champlain manufactures a complete line of rotagrature, aniline, rotary letterpress and allied equipment for packaging and specialty printing.

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50 JELLIFF AVENUE, NEWARK 8, N. J. . MILLS AT NEWARK, N. J. and PITTSTON, PA.



Research

Continuous research on materials used in the manufacture of labels and folding cartons to meet specialized requirements is conducted by U-S chemists and technicians. Example: This FROST-PROOF label developed for quick-frozen juice concentrates and other frozen food products. The special finish applied to the label protects it against the rigors of sub-zero temperatures, preserves its original attractiveness and PYS-O-MATIC sales appeal.



EYEOMATIC PACKAGING.



Design

Functional qualities of a package involving construction features for utility and protective qualities receive expert attention at U·S. Example: The "ALL" detergent carton with laminated carton liner, applied by patented Permaline process, provides three-way protection to the contents. It is moisture resistant, grease resistant, and sift-proof. The PTS-OMANC sales appeal of the package is reinforced with buyer satisfaction insurance.



THE UNITED STATES PRINTING

EXECUTIVE OFFICES: CINCINNATI 12, ONIO . Sales Offices in Principal Cities





Merchandising

U-S personnel is well qualified to approach your packaging problem from the standpoint of better merchandising—more effective display, faster turnover, greater user satisfaction. Example: Ingenious display container developed and produced by U-S for Bayuk's Junior Phillies—delivers the cigars with triple protection to keep them fresh regets them on the dealers' counters in effective TTS-SANIC display—practical, profitable merchandising.

something MORE than meets the eye

THE EYE IS QUICK to distinguish the qualities of good design and fine color reproduction in U-S EYE-O-MATIC packaging materials. But U-S skill and ingenuity go beyond superb surface appearance to embrace other important elements of a well-rounded packaging service. Continuous re-search and development work advance the functional qualities and merchandising values of U-S packaging materials. An EYE-O-MATIC package is produced to do a thorough job for the product automatically attract shoppers to it, influence their decision to buy, increase their satisfaction in the use of the product, and thus bring them back for more. Whatever the packaging problem, the U-S organization applies collaborative skills and experience to its solution. This comprehensive packaging service is consistently employed by leading manufacturers whose requirements are always top level. Write for samples and information on U-S EYE-O-MATIC packaging materials applicable to your business.



Service



U-S services are performed through a nation-wide organization of packaging and advertising specialists in 24 sales and service offices throughout the United States. Six modern U-S plants, strategically located from coast to coast, are responsible for finest color reproduction and precision manufacture of pre-0-same packaging and advertising materials.

AND LITHOGRAPH COMPANY

PLANTS: Bailimere, Md. . Cincinnell, O. . Erie, Pa. . Mincele, M. V. . Rodwood City, Calli. . 21, Charles, II



Here's everything you need to know about Military Packaging written in simple, easy-to-understand language.

Cromwell's handy Handbook shows you how to read Government Specifications, how to find the answers you need. This convenient reference book will save you many hours of time—will greatly simplify your handling of Defense Order projects. No obligation, of course. Write today for your free copy to:

The CROMWELL Paper Company

4801 5. Whipple Street Chicago 32, Illinois

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Manufacturers of

COPPER-PAK FERRO-PAK MARTIN CROMPACO SIMMONS

Government packaging Specialty bags Multi-wall sacks Industrial covers Case liners Tympan



You Know What You're Getting
... in a Pedigreed Dog, or
a Pedigreed Box

THE SCOTTISH TERRIER of the Scotch Highlands has a longer history than can be traced. His short legs and large head with small ears give an audacious yet friendly appearance. Loyal, active and full of character, the little "Scottie" is very popular today.

You GET the background in your dog's pedigree certificate. But you have to go behind the box maker's certificate to see whether that product is truly pedigreed.

Union's "pedigree" includes the forests of virgin timber—Union-owned and cultivated—the control of every step in manufacture through the world's largest integrated pulp-to-container plant—right through shipping of Union boxes to you.

All this means you can depend on Union boxes for uniformity, car after car, for minimum loss from breakage and fewer returns. You'll agree, as hundreds of America's great names agree, that Union corrugated containers are pedigreed.

For example—Scott Paper Company ships its famous facial tissues in Union's pedigreed boxes.



Dependable Packaging Since 1872



UNION Corrugated Containers UNION BAG & Paper Corporation

Principal Offices: WOOLWORTH BLDG., NEW YORK 7, N.Y.

Corrugated Container Plants: SAVANNAH, GEORGIA • CHICAGO, ILLINOIS • TRENTON, NEW JERSEY











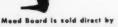




Whon science says "At ease!" to Mrs. Housewife, she takes it literally. She goes in a big way for gadgets which grind out her household chores effortlessly ... plumps hard for things like electric dishwo-1.2 ., which relieve her of one of the home's most onerous tasks.

The electrical appliance business-brisk since the wargathered fresh voltage from the tension over Korea. Typical are the 6,200,000 electric refrigerators (worth \$1,602,266,000 retail) which were sold in 1950-as against 4,450,000, for \$1,134,750,000, in 1949. Similar upswings were noted in such items as washing machines, electric ranges, irons, mixers, vacuum cleaners, waffle irons. Many major and most minor electrical appliances go to market these days in staunch corrugated cases.

MEAD .009 Chestnut Corrugating admirably abets this movement toward more leisure for the Lady of the House. It's made superstrong of chestnut and other hardwood fibres. Along with MEAD Liner, it has provided one of the best buffers against damage which canny shippers have known for the past couple of decades.



MEAD BOARD SALES, INC.

NEWARK 2, N.J. 786 Broad St.

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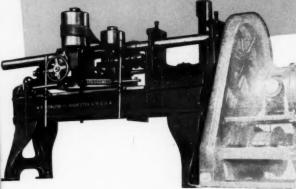


FISHER'S FOILS

FISHER'S FOILS LTD., WEMBLEY, MIDDLESEX, ENGLAND Phone: Wembley 6011 Cables and Grams: Liefnit, Wembley (A.B.C. Code 6th Edn.)

M-W,31

TURN TO PAPER WOUND **CANS** and TUBES **Avoid Container Setbacks**



CUTBACKS in materials, mounting costs, likely shortage of labor face container industry.

Knowlton Convolute Wound Paper Cans and Spiral Wound Tubes enable container production men to escape or minimize these difficulties.

Containers produced on these machines have 4 major assets. They are strong, can be turned out fast, can be produced in a variety of shapes and sizes, and cost less to make and less to ship.

Let us submit detailed facts or quotations which prove the efficiency and economy of the Knowlton Convolute Paper Can Winder and Spiral Tube Winder.

KNOWLTON LOW-COST PRODUCTION EQUIPMENT

SET-UP BOX

Single & Double Scorers Single and Double Rotary Creasers and Cutters Single and Double Corner Cutters Single Stayers (All Sizes) Universal Coverers, Power (All Sizes) Hand Power Coverers (All Sizes) Bench Coverers Toppers (All Sizes) Slitters and Rewinders Flange Benders (Automatic) Glue Pots

PAPER TUBE & CAN

Automatic Convolute Paper Can Winders Spiral Winder (Light and Heavy Wall) Spiral Cut-offs **Tube Recutters** Lap Tube Rollers

SHIPPING CONTAINER

Heavy Vertical Slotters Heavy Bar Creasers Paraffine Coaters

GUMMED STAY PAPERS

Gray, Brown and White



ROCHESTER, NEW YORK



ALL 4 FILLED ON ARENCO

Where speed, cleanliness and accuracy are required, the Arenco Filler cannot be surpassed. Whether you're packaging water-thin suspensions of antibiotics, medium viscosity creams or heavy non-flowing compounds, they all can be handled efficiently by the Arenco.

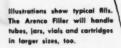
Not only is the Arenco versatile in the range of products it fills, but it fills an extreme range of containers as well—from tiny 1 cc vials to giant 250 cc (834 ounce) tubes.

Sterility Only stainless steel or resistant metal contacts the product being filled. All of these parts—including the stainless steel single cylinder pump—are easily and quickly demountable for cleaning and sterilization.

Changeovers Size adjustments and material changeovers take only moments—not hours. And the Arenco will fill most products at speeds from 40 to 55 containers per minute.

Accuracy Even when the smallest quantities are being filled, the Arenco maintains the high degree of accuracy for which it is world famous. Recent tests on filling 1 cc ampoules show accuracy to \pm 1%. "Give-away" on larger fills is even less.

Service The same organization which services 2,000 other Arenco machines in all parts of the country is available to service your Arenco filler. Competent mechanics and complete stocks of spare parts are always on hand. The nearest Arenco representative can supply full details. Contact him now.



15 CC



Hopper or filling head to fit product. No container, no fill. Automatic cleaning and cap tightening for tubes.

ARENCO Machine Co.

25 West 43rd Street, New York 18, N. Y.

REPRESENTATIVES

R. P. Anderson Co., 603 Texes Benk Bidg., Dalias 2, Texas King & Anderson, 1355 Market St., San Francisco 3, California Tom McLay, P. O. Box #14, Pert Deposit, Maryland Packaging Equipment, Inc., 2013 Olive St., St. Louis 3, Missouri Burrard C. York Packaging Machinery, 5807 W. North Ave., Chicage 39, Ill. Hashall Co., 1414 Morningside Drive, NE, Atlenta, Ga. Canada: Richardson Agencies, Ltd., 454 King St., West Toronto

HADDOCK

KEEP FILLETS IN K. Taint No Fish Here's one you can believe. Better printing equals more eye appeal equals more fish in the pot. Is it any wonder that so many companies are baiting their hooks for more sales with wraps designed and printed by Standard? We'd like to show you how to increase your catch. PRINTERS OF CELLOPHAME, ACETATE and GLASSINE SINCE 1936

COLUMBUS, GEORGIA
Sales Offices: Ballas, Texas — Charlotte, N. C. — Jackson, Miss.



HARD TO BELIEVE?

Unless you see the Leaning Tower of Pisa for yourself, you might find it hard to believe that a tower 181 feet tall could lean 16 feet off the perpendicular and still stand for six hundred years.

And unless you see Patapar Vegetable
Parchment and test it for yourself, you might
find it hard to believe that paper can remain
strong when wet, be boiled and stay beautiful,
and resist penetration of fats, grease, oils.

Hard to believe? If so, we invite you to investigate Patapar.

Standard weights and types of Patapar are ideal for most jobs. However, when special characteristics are required, special types of Patapar are recommended. Altogether we've developed 179 different types. They fill an endless variety of requirements.

For the whole story of Patapar, write for Booklet T.



This Keymark, nationally advertised symbol of wrapper protection, can be included on printed Patapar

Paterson Parchment Paper Company

Bristol, Pennsylvania

Neadquarters for Vegetable Parchment since 1885

West Coast Plant: 340 Bryant Street, San Francisco 7, California Sales Offices: 122 E. 42nd Street, New York 17, N. Y. 111 W. Washington Street, Chicago 2, III.

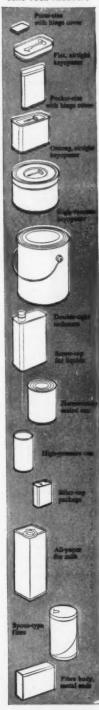
PATAPAR IS WONDERFUL FOR:

Butter wrappers Ham boiler liners Deep freeze wraps Can liners Fish wrappers Cheese wrappers

Margarine wrappers Milk and cream can gaskets Vegetable wraps Bacon wrappers and many other uses

Furnished plain or beautifully

Patapar
HI-WET-STRENGTH
GREASE-RESISTING PARCHMENT



Did you know that...



And, mind you, this merely scratches the surface in attempting to mention the thousands of products now packaged in Canco's famous sanitary can!

BUT . . . did you know that although the sanitary can is recognized instantly by millions it is only one of hundreds of containers pioneered by American Can Company?

And did you know that in originating and perfecting these containers Canco successfully satisfied the specifications of hundreds of businesses in widely different fields?

Canco has accumulated 50 years of priceless experience so that its facilities and services are the most versatile in the industry.

Today, in these critical times, Canco's knowledge and resourcefulness will help its customers meet the unusual problems brought about by the national emergency.

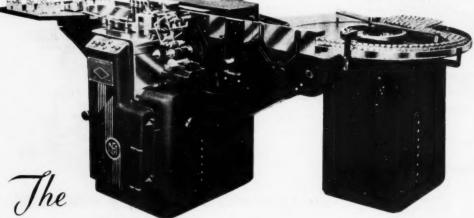




CANCO Containers—to help people live better

NEW YORK . CHICAGO . SAN FRANCISCO . HAMILTON, CANADA

Introducing



BANKS" LABELLER

Manufactured by

MORGAN FAIREST LTD

SHEFFIELD, ENGLAND Of Unique Design and Principle. A High Speed Automatic

BODY LABELLING MACHINE for Cylindrical Containers. Fitted with Electrical "No Bottle—No Label" Device.

Precision labelling from 2,400-10,200 units per hour using one label stack only.

The "Banks" Labeller is simple to operate, occupies very little space, and positions the labels positively, accurately, and without any trace of surplus gum beyond the edges of the label, irrespective of the label shape or size.

Change from one size of container to another is obtained easily and quickly.

Cleaning down takes only a few minutes.

6 Models now available for strip and body, all or part round labelling for labels from ½" up to 12" wide.

Over 1,000 machines are at work in or on order for the following countries.

Austrialia Finland Italy

New Zealand

Belgium Benzii Switzerle Maxico

Holland Ireland

and in 154 Cities and Towns in Great Britain

Exclusive Distributors for U.S.A.

STOKE MITH 6

PACKAGING MACHINERY



Subsidiary of Food Machinery and Chemical Corporation Philadelphia 24, U.S.A.



Join the hosts of manufacturers who have scored hits through the use of Foilcraft's brilliant, distinctive wraps, labels, tags and decorative displays.

Whether it be a cheese or butter wrap, a box wrap for the Christmas season, a gift wrap for Mothers' Day, a merchandising display for your materials, or a new label for your products; whatever the size and shape of your package, whatever the occasion, Foilcraft's visible quality will compel the attention of the consumer.

We are also producers of barrier bags for defense packaging.

Our complete designing and merchandising departments are at your disposal.

Free samples on request . . . write now for specific information with respect to your requirements.

FOILCRAFT PRINTING CORPORATION

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BROOKLYN 18, NEW YORK

SPRATAINER Does It Again!





Other Famous Totco Products

Moth-O-Blitz and Insect-O-Blitz
in 6 az. and 12 az. Crown SPRA-TAINER

The Tetco Company's COLD ReLIEF is a handy, safe, effective nose-and-throat medication and powerful vaporizer, all in one. COLD ReLIEF is pressure-dispensed . . . penetrates nasal passages thoroughly, medicates areas usually untouched by nose drops, inhalants, and ordinary atomizer preparations. Ideal for Hospitals — Sick Rooms — Nurseries! Perfectly safe for babies.

The pressurized container chosen for COLD ReLIEF is the original lightweight, low-cost propulsion can, Crown SPRA-TAINER with exclusive "No Side Seam—No Top Seam" construction and eyeappealing modern design.

ALWAYS LOOK TO CROWN FOR LEADERSHIP IN CREATING AND MANUFACTURING FINE CANS FOR EVERY PURPOSE.

One of America's Largest Can Manufacturers

CROWN CAN

CROWN CORK & SEAL COMPANY

Plants at Philadelphia, Chicago, Orlando . Branch Offices: New York, Baltimore, Pittsburgh, St. Louis

MAKE

Better Bisplays

CELANESE* Acetate SHEETING

Get these positive advantages:

Acetate Scores better
Cuts easier
Blanks perfectly

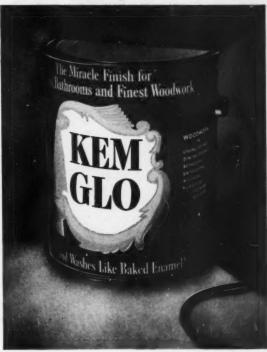
It can be stitched
solvent bonded
cemented to other materials

It can be heat formed drawn blown

It has a perfect surface for **printing**stencilling
silk screening

It is obtainable in clear transparent translucent clear colors opaque colors pearl effects mat surfaces

It is available in cut-to-size sheets
cut lengths and rolls
widths up to 31 Inches
thicknesses from .003" to .250"

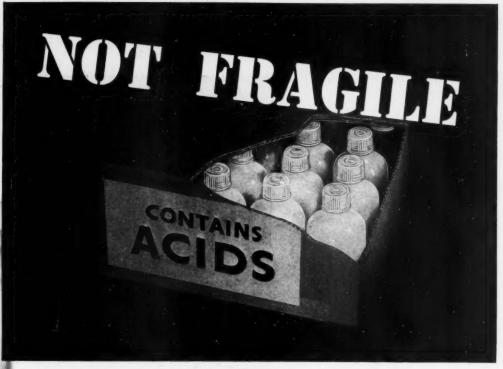


Kem Glo illuminated display manufactured by Advertising Plastics Co., Inc., Washington, D. C.

Celanese acetate Sheeting is the unexcelled material for displays, printed products, watch and dial crystals, optical frames, lamp shades, and literally thousands of other products and parts. Get complete information from your Celanese representative. Celanese Corporation of America, Plastics Division, Dept. 108-K, 180 Madison Ave., N. Y. 16. In Canada, Canadian Cellulose Products, Ltd., Montreal and Toronto.



*Reg. U. S. Pat. Off.



For Packaging Acids so that they can be shipped, stored and

handled without fear of breakage, on the ground or in the air. Need to get a-highly corrosive or expensive chemical somewhere in a hurry? The Plaxpak bottle is the answer. Take it high in the sky. Unequal pressures will cause it to flex, but not break or pop its closure. Drop it on the ground. It will bounce, but not break. Shipping weights are drastically reduced. When compared empty, the Plaxpak bottle is one-fifth the weight of glass; when filled, one-half the weight.

Only the best is

THER EMHART PRODUCTS INCLUDE:



AUTOMATIC PACKAGING
EQUIPMENT
STANDARD-KNAPP

STANDARD-KNAPP
Division of Emhart M/g. Co.
PORTLAND, CONNECTICUS



GLASS MAKING MACHINES

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HIGH SPEED AUTOMATIC PRESSES

NEMRY & WRIGHT Division of Embart Mg. Co. HARTFORD S. CONNECTION



PREMIUM QUALITY

THE V & O PRESS CO.

Bivision of Embart Mig. Co.

HUBSON, NEW YORK



For Packaging Pharmaceuticals

or powder form, the Plaxpak bottle offers the triple advantages of unbreakability, lightweight and, where desired, controlled dispensing as a spray, stream or droplet. Shown above are some stock bottles for medicinal use.



ALCOR PERCENTIAN PRODUCTION AND PERCENTIAN AND PERC

For Laboratory Research

Plaxpak bottle provides the convenience of an unbreakable, chemically inert container, and the added advantage of controlled dispensing. The stream dispensing fitment shown above was developed by S. H. Ansell & Sons, Boston, Mass.

For Boosting Turpentine Production

the Plaxpak bottle has proven an invaluable aid. It is used as a container for sulfuric acid, which is squirted into "wounds" in the tree to increase sap flow. Safe, easy to handle and inert to the acid, the Plaxpak bottle speeds up operations, vastly increases manhour output and helps to lengthen tree productivity.

good enough

HELPFUL PLAX LITERATURE
Catalogs on Plaxpak bottles and other Plax
products are available on request. Also avail-



"PLAXPAK" is a registered T. M. of Plax Corp.

Plax blow-molded products are made under the following U. S. Pats.: 2128239, 2175053, 2175054, 2230190, 2260750, 2283751, 2349176, 2349177, 2349178, 2230188. *Reg. U. S. Pat. Off.



PLAX CORPORATION

Subsidiary of Emhert Mfg. Ce. P. O. BOX 1019, MARTFORD 1, CONN. In Canada, Plax Canada, Ltd., Terento Sales Offices: New York City, Syracuse, Philadelphia, Cincinnati and Chicago.



You can't buy better than ...



ALCOA TOPSIDE CLOSURES doubly protect your product by sealing the bottle at top and side. They are tailor made to maintain a positive vacuum under even the most rigorous shipping conditions. Yet they are easy to open because threads are rolled on, assuring perfect match between cap and glass.

You can apply Alcoa TopSide Closures at speeds up to 400 per minute on Alseco sealing machines. For more information on our wide range of closures and sealing machines write for your free copy of our catalog, or call your local Alcoa sales office, listed under "aluminum" in your classified telephone directory.

Because rearmament needs for aluminum must be served first, the supply of Alcoa Closures is limited. Your Alcoa sales office can tell you about all types of Alcoa Closures and availability.

How Alcoa TopSide Closures are tailored to give each bottle a double seal

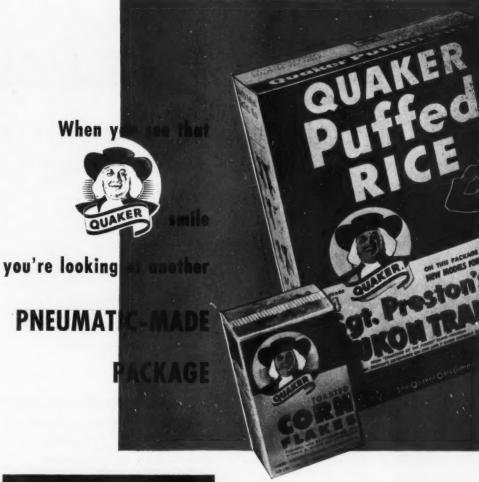


Controlled pressure secures cap on sealing surface, embedding bottle lip into cap liner, effecting top and side



With the cap held down tightly on the bottle, rollers move in and roll on the threads, conforming perfectly to the contours of the bottle.

ALUMINUM COMPANY OF AMERICA • 1705L GULF BLDG. • PITTSBURGH 19, PA.





One of several Pneumatic Large Double Package Makers in operation at the huge Quaker Oats mill in Cedar Rapids, Iowa.

Some people like to buy their cereal in large packages—others prefer the small, single portion size. Quaker gives them almost any kind they want, any way they want it—with an assist from Pneumatic machines.

In Quaker's case they use Pneumatic's Double Package Maker equipment for a number of their famed breakfast foods—because flavorsome cereals call for the extra protection of the "package within a package" these machines make possible. The extent to which other leading producers of packaged goods use Pneumatic machines leaves no doubt that Pneumatic is industry's No. 1 choice—because of smoother, trouble free, "lower cost per container" performance.

PNEUMATIC SCALE CORP., LTD., 82 Newport Ave., Quincy 71, Mass. Branch Offices: New York; Chicago; San Francisco; Los Angeles; Seattle; Leeds, England.

PNEUMATIC

PACKAGING AND BOTTLING MACHINERY

Betner... America's Busiest Bags

Whatever the packaging need, there's a Betner bag to fill it!

Just a few examples of Betner's complete bagging service:

DUO-TITE . . . the Perfect "No-Sift" Bag

At last, the ideal bag for products which must be packaged in siftproof containers . . . insecticides, fertilizers and other dry chemicals. DUO-TITE's sturdy construction combines special liners with folding, gluing, and heat-sealing. Available in sizes holding up to 25 lbs. of bulk powdered material.

THERMOSEAL . . . the Bag with 20% More Protection

It's a fact. There is 20% more protection offered by Betner's THERMOSEAL than by other closures. Best of all, THERMOSEAL eliminates staples and other adhesives, and insures water-vapor protection, siftproofness and retention of flavor.

BENCOSEAL . . . the Bag or Wrap with Extreme Water-Vapor Protection

Absolute sanitation, dryness and flavor freshness are guaranteed by this unique combination of paper, metal foil and tissue laminated with a thermoplastic wax film. BENCOSEAL may be heat-sealed at moderately high temperatures without fear of blocking, thereby rendering itself to high speed production. It lends itself to any type of printing for consumer eve-appeal.

FLAY-O-TAINER...the Bag with Vacuum-Packed Freshness

Whenever freshness is a must—Betner's FLAV-O-TAINER delivers it! Lined with Pliofilm (mfd. by Goodyear T. & R. Co.), all inner seams are hermetically sealed. And simply by replacing air with inert gas, and heat sealing at top, FLAV-O-TAINER becomes an air tight unit.

complete bag service...

from idea to finished bag. Also machinery for closing ceffee bags, and inserting and closing liner bags in cartons. Your inquiries are welcome. Samples with full technical information will be promptly supplied.

Benj C Betner Co DEVON, PA.

everyday:

metal containers are proving their worth more and more to the merchandiser and consumer.

the durability of a metal container alone saves packaging grief in "breakage" when shipping and handling.

freshness, as well as keeping a product dry, also, are great factor in the growing popularity of metal containers.

our ability to create new designs at your disposal, or your personal design can readily be adapted to our line of containers.

stock sizes in plain and lithogradesigns also are available.

brochure and quotations sent upon request.



MANUFACTURERS OF PLAIN AND USHOGRAPHED CANS
ASO NORTH LEAVITY THE EXT. CHICAGO 12, ILLINOIS



protective barrier materials

ROLLS · RAGS · ENVELOPES

A complete line of barrier materials covering packaging specifications including:

MIL-B-131A JAN MIL-C-6056 MIL-

JAN-P-117 MIL-E-6060 JAN-B-121 AN-B-20 FOR CUSTOM LAMINATING & COATING

We make functional and decorative products; Heat-Sealing Foils; Jar Cap Liner; Electrical Insulation; Laminated Foil and Board; Decorative Foil and Paper, colored and embossed; and special combinations of plastics, fabrics, foils and papers.

SALES OFFICES: BOSTON, CHICAGO, CINCINNATI, DECA-

. .



1 THE FLOYD A. HOLES CO.

TUR, GA., DENVER, DETROIT, FT. WORTH,
LOS ANGELES, NEW YORK, PORTLAND,
SEATTLE, WICHITA

Bedford, Ohio



people want

Fine

Paper Boxes



Rowell makes them



COSMETIC BOXES

E.N. Rowell Co. Inc.
Manufacturers of Fine Paper Boxes
BATAVIA. N.Y.



IN THE NEWS!

Automatic Weighing Machines

Versatile!

CANDY, cookie, and cracker manufacturers are most frequent purchasers of this model. Bags applied manually. Rigid containers handled either manually or automatically. Weight range is one-half to 16 ounces, net. Incorporates the exclusive Hy-Tra-Lec method of weighing. (Hy-Tra-Lec Weigher, Model M)



Fast!

TODAY'S number one choice where small and medium size bags are to be filled with potato chips and like products. Exceptionally fast. Bags are applied manually. Weight range varies with products. With potato chips it's

one-half to three ounces. Design simplicity a definite superiority. (Hy-Tra-Lec Weigher, Model H)

Accurate!

CRACKERS weighed and filled into cartons at high speed with record accuracy. Completely automatic. System includes (1) a pre-filler which weighs and fills within 98% of desired weigh (2) a finish-filler which weighs and fills at single file rate to within 99-100% desired accuracy! Weight range is 6 to 16 ounces, net. (Hy-Tra-Lec Weighing System, Model CE)



Descriptive literature, user reports, and delivery schedules available and gladly supplied to dry product packagers. Save money with Hy-Tra-Lec's speed, accu-

EST. 1893 - 500 CALVIN ST., DURHAM, N. C.

SUBSIDIARY OF THE SPERRY CORPORATION KING 4 ANDERSON, SAN FRANCISCO EDWIN F. DELINE C SPERRY GYROSCOPE COMPANY, LTD., LONDON EDWIN F. DELINE COMPANY, DENVER

COMPANY SALES OFFICES: JERSEY CITY . BOSTON . DURHAW R. P. ANDERSON COMPANY, DALLAS



Lithographed Displays



Folding Carton

Cellophane Bags



. . . .

HOLEPROOF Sells Glamour With MILPRINT "follow thru"



Lithographed



Lithographed Displays



Printed Promotional Material

from sheerest have to negligens ...

Like hundreds of other leading Alperican manufacturers, Holeproof knows it pays to look to Milprint for best-selling packages... backed, by COMPLETE, COORDINATED MERCHANDISING FOLLOW-THRU. Yes, Milprint starts where others leave off... provides lithographed displays, booklets, posters... all kinds of printed material to promote the sales of a packaged line.

Milprint Follow Thrus Service can help you, too—for Milprint offers the broadest range of merchandising experience...a complete staff of skilled designers...the widest choice of materials and printing processes.

Call your Milprint man today!

Milprint INC

General Offices Milwoutes, Wis - Sales Offices in Principal Cities

Milprint Lithography stars in 1930 competition. Three first awards and one honorable mention went to Milprint in the first annual Offset Lithographic Award Combetition.

Printed Collegiums, Phillips, Polyathyleine, Acessin; Glaterin; Folis, Folding Carters, Dupy, Lithographed Displays, Printed Promotional Displays, Printed Pri



FEDERAL'S VISI-BOX IS A BUSY BOX!

BUSY showing your product . . . BUSY keeping your products fresh . . . BUSY promoting greater sales for you!



FEDERAL creates re-usable containers to fit
ANY PRODUCT

Small or large boxes—transparent or opaque boxes—hinged or plain boxes—compartment boxes—intricate design boxes and containers.

There's a FEDERAL rigid STYRON plastic container for every packager of dairy products, foods, confections, cosmetics, class or bulk merchandise.

No. 650-0 Eye Shadow Box %" inside dia.

If your product requires special packaging FEDERAL will design and mold to your exact specifications.

No. 647-0 Bobbi Box 11%" x 11%" x 21%"



No. 787-0 Deluxe Defroster Tray 141/4" x 111/4" x 2"

No. 645-0 Heart Box



No. 651-0 Rouge Box 11/4" inside

No. 644-0 Pagoda Candy Dish



No. 642-0 Lotus Box



No. 640-0 Buddha Box 8½ " x 4½ " x 6½ "





No. 641-0 Ming Three Drawer Chest 7½" x 4½" x 5½"



No. 643-0 Imperial Box 8" x 4" x 4"

ATTENTION: FEDERAL designs and manufactures Polystyrene caps for the glass packaging industry.

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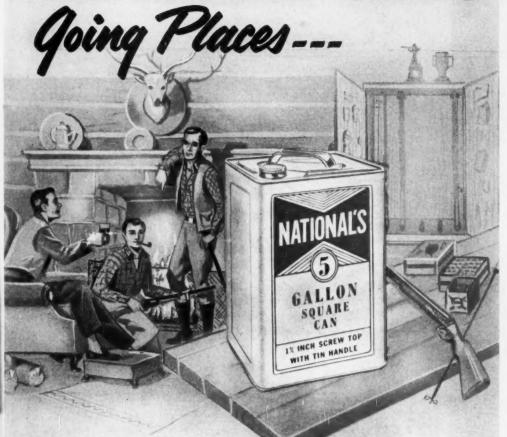
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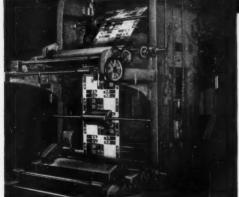


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The research phase of aniline ink problemsolving. Here a team of BBD ink engineers go into huddle over tough specifications posed by aniline printer. From this discussion will come a clear-cut definition of problem and blue-print of plan for solving it.

Manufacture of aniline ink on miniature scale in BBD laboratory. Chemists' calculations indicate this formulation may lick the problem — but it must pass complete series of production and end-use tests before being OK'd for release to customer.





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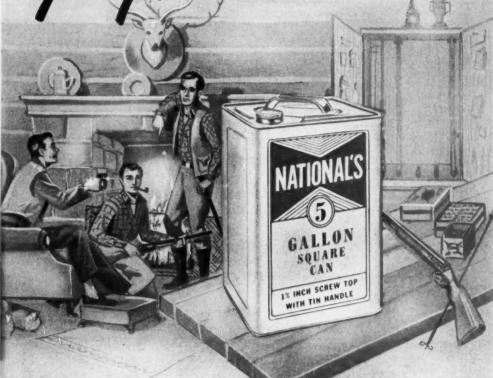
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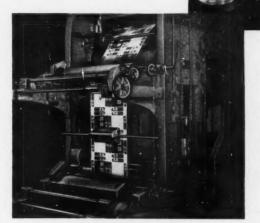
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U. S. A. Patent Nos. 2.517.027. 2.530.400

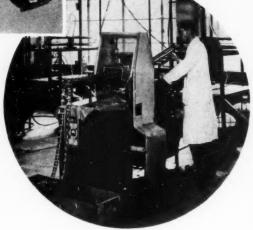
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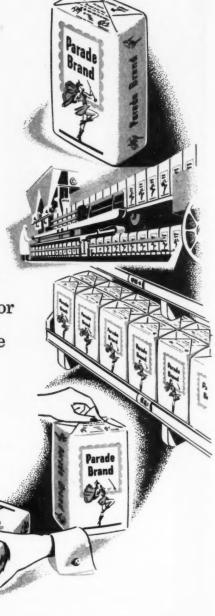
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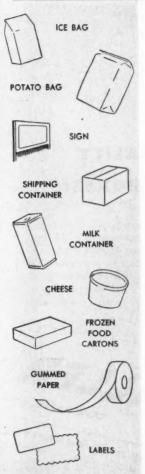
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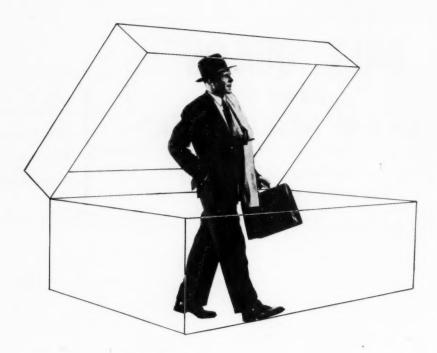
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101





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STRIP FEED PRESS—has a rating of 25 tons, handles 36" strip and takes single, double or multiple dies. With single curler, handles 300 or more ends a minute—with double curler, twice this.

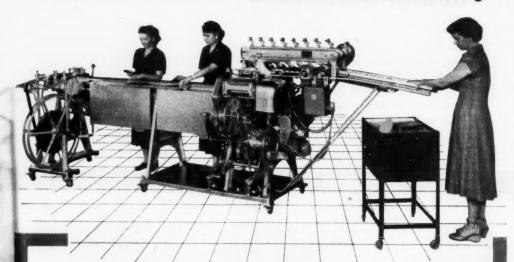
With wages spiraling upward, costconscious management has found it can help offset the increased price of tin plate with Hamilton-Kruse machines because they can handle the larger, more economical sheets with minimum waste in rejects and scrap. It's no wonder that today's can-makers recognize Hamilton-Kruse as the password to dependable, high-speed production. If you have the problem of meeting today's demands with inefficient equipment, you'll do well to check on Hamilton-Kruse.

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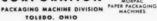


















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IPI. Anilox and Vaposet are trade

"Easy Pickin" Known Too Late Makes Production Hesitate

For best results, package printers should know pick resistance of



board fibers long before press time. Board surfaces differ in ability to resist being "picked" or pulled loose by inked printing plate. Boards that pick easily may mean costly delays if detected at last minute. Be safe-give your ink maker sample of production stock early. Write today for free copy of "Limitations of Ink Adjustments to Paper.'

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The Larus and Brother Co. Christmas package for "Holiday" Tobacco is a prize example of how to give "buy appeal" to high quality products. Naturally, Wilson Paper Box Company of Richmond, Va., chose IPI inks to produce this new package. Expert printing of traditional Christmas colors gives it a special holiday spirit that invites purchase. Topnotch packages such as this mean bigger sales - they end up under Christmas trees, not on store shelves.



LILY-TULIP PICKS IPI VAPOSET INKS FOR NEW RAYMOND LOEWY DESIGNED SEALTEST PACKAGES



IPI ANILOX INKS GIVE TOP FLIGHT RESULTS ON WIDE VARIETY OF STOCKS FOR PACKAGES

Top flight results on a wide variety of stocks are just one of many advantages you get with IPI Anilox inks for aniline and Anilox presses. 100 per cent pigmented Anilox inks are truly opaque, have full color strength and are extra lightfast for quality work on acetate film and all types of cellophane. They print sharp, look sharp on practically all papers and boards - even on hard-to-print polyethylene.





FERD'NAND







National Dairy Line Is Fresh and Crisp with "Self-Selling" Touch

For high grade food packages, the right inks are a must. That's why Lily-Tulip Cup Corp. chose IPI Vaposet inks for the new line of Sealtest Nestrite containers for National Dairy Products Corp.

Designed by Raymond Loewy, these packages are outstanding. Each has its own color scheme and the "selfselling" touch, so important in self-service stores. They are remarkably fresh, crisp and eye-catching. The familiar, bright red Sealtest trade-mark stamps each item as of highest quality.

Odor-Free Vaposet Inks Ideal for Cup Printing

Cup makers like the way steam setting of Vaposet softens stock for easy forming. Lily-Tulip prints the new Sealtest containers on high speed Hess & Barker rotary web pressesequipped with steam units which dry the odor-free Vaposet inks instantly for immediate rewind. Stocks can be formed into cups and waxed two hours after printing.

All Package Printers Profit with Vaposet

Vaposet inks are amazingly versatile. They are first choice of many leading package printers for everything from breadwraps to corrugated and heavy fiber stocks.

Remember, IPI Vaposet inks dry instantly with steam, are odor-free, can be waxed two hours after printing, have excellent heat-sealing qualities and permit handsome printing.

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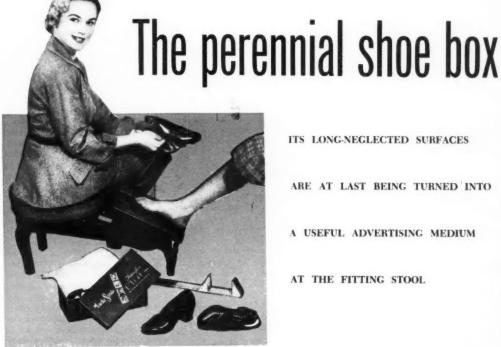
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oackaging



TO COURTEST THE ROCK MORE CO

ITS LONG-NEGLECTED SURFACES

ARE AT LAST BEING TURNED INTO

A USEFUL ADVERTISING MEDIUM

AT THE FITTING STOOL

Shoe packaging is an odd paradox in modern merchand.sing. Americans buy some 500,000,000 pairs of shoes every year-practically all of them individually boxed. Yet nobody buys a box of shoes like he does a box of crackers or a bottle of milk. Shoes, in the ordinary sense, are not a packaged item. They are bought for appearance, quality and fit when taken out of the box for try-on in the

The basic functions of packaging in the shoe business are protection and utility. The individual shoe box for each pair is in reality the tool for an efficient filing system to keep each pair as a unit, to maintain an accurate

inventory of the tremendous range of styles, widths and lengths (a complete range of sizes in one style of women's shoes today can run as high as 119 pairs) and to protect shoes from scuffs, dents and so lage.

Since the invention of machines for making the set-up box more than a century ago, no other type of container has served the shoe industry more efficiently and it appears that the set-up shoe box will continue for a long time to come as the most practical solution to the shoe industry's basic packaging problem.

Even the newer types of so-called folding boxes for the shoe industry. which are making some headway because of lower cost and faster production, are more like set-up boxes than what are generally considered folding cartons. They are cut and scored automatically like folding boxes, but they must be glued or stapled into strong rigid containers, either by the box maker or on a special machine in the shoe manufacturer's plant before they can be used. Thus they have the same rigid characteristics as the conventional set-up shoe box.

A visitor to any large shoe department on a busy Saturday, when numerous sales people are rushing from stock shelves to fitting stools with armloads of boxes containing shoes of proper sizes for customers to try on,



SMART IDENTITY is the purpose of modern design for store boxes such as these used by Saks, Lord & Taylor and Blum's, which tie in with store's wraps and other promotional symbols.

can quickly appreciate the reason for the traditional shoe box. The rigid box with shallow telescoping lid is easy to stack. Clerks can slide it off stock shelves easily and carry four or five boxes at a time. Shoe boxes must be easy to open and reclose, yet sturdy enough to withstand numerous handlings—sometimes as many as 10 removals and replacements before a pair of quality shoes is sold.

Despite the fact that little change seems possible in the form of the shoe box, due to its utility features, the last few years have witnessed a markedly renewed interest in shoe packaging to develop the merchandising potentials offered by the millions of shoe-box surfaces.

Shoe manufacturers and retailers have seen the results of improved package design in other fields—the use of attractive colors, identifiable symbols to promote brands and designs that tie in with over-all store packaging programs. Gradually they have come to realize they have been missing promotional opportunities.

Another contributing factor to this attitude is the trend to "salon interiors" in the modern shoe department. where all the boxed merchandise is kept in out-of-sight stock rooms. Until the last few years most shoe retailers followed the practice of stocking shoe boxes on open shelves around the walls, visible to the customer. For this arrangement, retailers generally tried to keep their boxes uniform and adopted a single box design, supplied with the shoe by the manufacturer. In the "salon interior," this necessity for package uniformity has been eliminated.

The introduction of fashion to shoe merchandising, growing brand consciousness (which incidentally is being further fostered today by changing corporate structures in the shoe industry for tax purposes) and wider use of national advertising have created new requirements in package design that tie in promotional effort with point-of-sale possibilities at the fitting stool. The success of firms like Red Cross and Joyce, which began extensive brand promotions in the '30s, helped to intensify this activity.

"We're not kidding ourselves that pretty boxes will sell shoes directly," said a representative of one firm which has recently introduced a new technique in shee box design, "but undoubtedly there is a decided plus value in presenting a sales message on the box which the customer sees at the fitting stool and the salesman can talk about when he shows the shoes."

There is also promotional value in the colorful well-designed box which the customer carries out of the store and perhaps re-uses in the home. Wherever it is seen it is a reminder of a brand or of the store where it was purchased. A word should be added here, too, about the trademarked tissues that enhance the interior appearance of today's shoe boxes before the customer and also have their part in creating a memorable impression.

The current interest in shoe box design may be divided into three categories: (1) shoe box coverings which are related to a store's own trademark; (2) those which identify the boxes of manufacturer-retailer shoe firms; (3) those which distinguish the shoes distributed nationally under a single brand name through a wide variety of outlets.

In the first category are the many smart box coverings now being used



SHOE CHARACTER is impressed on shopper by illustrations of dancing shoes symbolizing the derivation of Capezios from stage and ballet shoes made and trademarked by this famous dancer's cobbler. by the department stores, such as the brown wood-grained lid bearing the firm name in black used over a base of brown linen-like design adopted by Saks Fifth Avenue, New York; the dark green box with the illustration of a single long-stemmed rose used by Lord and Taylor, New York, and the gloved feminine hand holding a lacy umbrella identifying footwear from the Blum Store in Philadelphia.

In the second category are the box designs used by manufacturer-retailers, which identify the footwear sold through their own retail stores, such as those used by Frank Bros., Florsheim and I. Miller.

In the third category are the many new designs which are being used today for the nationally advertised and distributed brands as well as for the numerous private brands sold through chain organizations. In this group would be the smart designs used to identify such fashion footwear names as Palter DeLiso, Capezio and Joyce.

Capezio, Inc., known as "the dancer's cobbler," began making stage shoes in 1887. It introduced fashion footwear in the '20s and in time found it needed a box design to reflect the character of shoes derived from ballet and stage styles. The current box design is thus distinguished by illustrations of seven brightly colored styles of Capezios dancing down the cover.

In this classification of branded fashion shoes, perhaps, is the widest opportunity for using the box design as a selling aid. One striking example of a new technique is the box just developed for Lucky Stride Shoes, Inc., Maysville, Ky. The box for this company's Fashion-Show Flats features the photographs and names of four famous models used in the company's national advertising with the theme, "Wear the Shoes Famous Models Choose." The box represents one of the first instances of the use of halftone photographs on a shoe box wrap. Printed in three colors-gray, yellow and black-the box has been specially designed so that photos of models may be changed from time to time by changing only the black plate.

To announce the new box to the trade, an accordion-fold announcement was tipped into the lid of the box. As the boxes were opened the announcement unfolded to a length of 2½ ft., telling the dealer of the planning and thinking behind the new package. Attached to the bottom

of the folder was the company's "instock" catalog showing the range of widths and sizes available. Since Lucky Stride features a complete range of sizes from 2% to 13 and from AAAAA to C widths—a complete chart of the firm's 119 in-stock sizes is printed on the bottom of the box.

Early reports of this new use of box surface as a selling aid are impressive. Dealers and sales people are extremely enthusiastic. It gives them an excellent talking point when they can point to the box at the fitting stool and illustrate to impressionable customers the theme—"Wear the Shoes Famous Models Wear."

The shoe box surface also offers an opportunity for presenting the advantages of certain specific selling features. While this would perhaps require too great an inventory of boxes in the case of women's shoes, it is being used effectively for children's footwear.

"Magic Loop Bumpers," children's shoes made by Hubbard Shoe Co., Milwaukee, Wis., a division of the Weyenburg Shoe Co., are being distributed in a box whose wrap is printed with line illustrations to call attention to the three main selling points of the shoes—"the Magic Loop that stretches around the ankle, the sole that extends up the back for added support, the wedge heel for proper body balance." The box is a great aid to sales people in demonstrating these advantages to mothers.

A main objective of the shoe-box industry during the past decade has been the development of equipment to produce sturdy, quality boxes at



UNFORGETTABLE DESIGN was the objective of Charles Sumner of Boston in selecting leopardspotted box covering with firm name in reverse on a bold black panel reproduced on all sides.

higher speeds and more economically. The traditional set-up box is still the preferred package for quality shoes because of its easy handling and the more elegant appearance that can be achieved by the use of a wide variety of printed cover papers. Its cost is comparatively high because of the hand stripping of both box lids and bottoms that is, according to the box makers, still necessary because manufacturers ask for so many odd-sized boxes and specialized work.

Standardization of sizes would greatly reduce costs and help make for more economical operation, according to the box manufacturers. The operating head of one of the country's largest producers of shoe

NEW ECONOMIES in shoe-box production are achieved by modern methods of cutting and seoring similar to folding-box manufacture, but boxes are set up rigidly by gluing and stapling. This patented box has a nylon string threaded along seore inside double-walled edges for strength.





REAL SELLING AID is provided by Lucky Stride box featuring halftone photographic illustrations of four famous models. Sales person has a talking point: "Wear the shoes famous models choose." Accordion fold inside introduced package to dealers.

boxes has been pleading for such standardization for years, but, according to him, nobody seems to listen. He points out that his company has on its records a list of more than 5,000 different shoe-box sizes, about 1,000 of them on the active 1.5t called for once a month. It is his view that the shoe industry could cut the number of shoe cartons to about nine to take care of nearly all sizes of shoes. He recommends the following:

Infants, 7½ by 4½ by 2¾ in.; children, 8½ by 4¾ by 3 in.; misses regular shoes, 9% by 5½ by 3¼ in.

Women's high-heeled shoes, 11% by 6 by 3% in; women's play shoes, 11% by 5% by 3% in; women's platform shoes, 11% by 6 by 3% in; women's novelty shoes, 11% by 6% by 3% in in;

Men's shoes, one principle size, 12½ by 6¼ by 4 in.; another popular size used by some men's shoe retailers is 13 by 6½ by 4¼ in.

Not all shoe manufacturers, however, are unmindful of the size and standardization problem. One firm, Johansen Bros. Shoe Co., St. Louis, and its subsidiary, the Valley Shoe Corp., pioneered a slightly larger shoe box a few years ago, based on a study indicating that women's feet had grown larger during the last 20 years and that modern boxes designed to accommodate their shoes demanded slightly greater dimensions to prevent

strain on the boxes causing scuffing and damage. (See "Bigger Feet-Bigger Boxes," MODERN PACKACING. Sept., 1947, p. 204). These firms adopted a new standard box measuring 12 by 6½ by 3½ in., which is reported to have met with wide success in the retail field. A number of other firms have followed this lead and are today using the larger box.

The rigid box of folding construction, which can be made at speeds up to 500 per minute, is extensively used today for shoes in the popularprice brackets and particularly for private brands sold in chain stores. This type of box will probably gain wider acceptance, too, depending on economy and the expansion of boxmakers' capaci'y to produce it. These boxes are said to represent a considerable savings in cost and are being given additional strength by one maker who has patented equipment for threading nylon string under the folds of the double side walls similarly to the way string reinforcements are stretched along the edge of the liner paper of men's shoe boxes to strengthen them against pull.

In general, most of the new surface-design interest in shoe-box presentation is concentrated in the women's classifications, although quality stores and shoe departments for men's footwear are extremely insist-



FOOTPRINTS representing various types of children's feet on Saks Fifth Avenue children's footwear box can be used to recommend the proper shoes.

SPECIAL FEATURES can be emphasized on box as has been done for Magic Loop Bumpers. Sales people show box cover to explain construction advantages.

ent on well-tailored boxes to reflect the high quality of the merchandise.

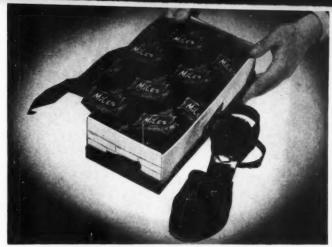
Carry-out boxes

Recently a novelty package, the carry-out box, has gained considerable attention in the shoe field. This is a vertical end-opening box, of either set-up or tuck-flap folding construction, equipped with a cord for carrying and re-usable for knitting yarn or other purposes. It cannot be classified, however, as a basic innovation in shoe packaging. It is given away by the retail store to a customer who is carrying out her shoe purchase. It does not replace the original individual box in which the shoes were shipped from the factory, but is in addition to it. After the shoes have been removed from the regular shoe box and the sale made, the retailer puts the shoes in the carryhome box as an extra service-one of those niceties shoppers like.

The benefit to the store is primarily promotional, although the carry-out box is reported to be quite worth-while in helping to cut delivery costs. The re-use appeal, store users say, almost always encourages a take-home purchase and the cost of the box is said to be less than actual delivery costs in many cases. The box, as it is carried out into the public, bears the firm name plainly wherever it goes.

CARRY-OUT containers have gained considerable popularity as a novelty promotional idea to save delivery. Andrew Geller's re-use folding carton with carrying cord, printed in gray with red and white stripes, is a familiar sight on New York streets.





TRADEMARKED TISSUES used as inner wrappings for shoes afford one more opportunity to keep the brand or the store name before customers.

It is not suitable for protecting shoes on stock shelves, because it is not easy for removal and replacement of contents. It is not suitable for mailing. Therefore, it remains in the promotional class with the additional value of eliminating delivery charges when the customer uses it to carry her purchase home. Apparently this is a decided feature, judging by the number of stores such as Wanamaker's, Philadelphia; Andrew Geller, New York; Famous-Barr, St. Louis; Sommer & Kaufmann, San Francisco, which are now using the carry-out box successfully.

One firm has been working on what might be called a decorative "sling" made of colorful mesh or some other suitable material which could be slipped right over the store's regular shoe box to provide the same carryhome idea, but utilize the standard shoe box instead of incurring the cost of a special carry-out box.

It is also reported that one firm is working on a decorative carry-out box to encourage the sale of a wardrobe of three pairs of shoes—a wardrobe for travel—that the dealer, after selection and purchase, could slip into a three-compartmented sturdy box with handle that a woman could carry on a trip instead of putting bulky shoes in her suitcase.

Also in the novelty class are the gift packages of infant's footwear. Several put-ups have been promoted in transparent acetate boxes, and last spring a package that attracted wide attention was a hinged box containing two pairs of baby shoes held in shape with plastic foot models, plus a pair of infant socks, a sachet and gift card.

The backbone of shoe packaging, however, is the rigid paperboard box, either of standard set-up or more modern automatic folding construction. Certain refinements might be added, such as transparent windows through which sales people could see contents at a glance without opening, as one shoe manufacturer suggested. It is questionable whether the additional cost would justify this innovation or whether windows might not weaken the boxes too much for the handling they must undergo.

Greatest opportunities for improvement appear to be in the further utilization of the box surfaces for promotional purposes—millions of square feet of free advertising space that have too long been overlooked as a sales tool at the point of sale.

CREDITS: Saks Fifth Avenue, Lord & Taylor, Blum, Capezio, Charles Sumnerset-up boxes, Frank C. Meyer Co., Brooklyn. Parish Fashion Shoes-box of folding construction (Meyer-Pak), Frank C Meyer Co. Lucky Stride-box covering. A. C. Clayton Printing Co., St. Louis, Mo.; box, Delmar Paper Box Co., Cincinnati. Ohio, and Duncan & Ohio Co., Cincinnati, Ohio. Magic Loop Bumpers-box covering, Milprint, Inc., Milwaukee; box, Manufacturers Box Co., Milwaukee. Andrew Geller-carry-out carton, Bradley & Gilbert Co., Louisville, Ky. Miles-trademarked paper, Whiteford Paper Co., New York.

COHESIVE PAPERS

NEW PRINCIPLE IN PACKAGE SEALING:
COATED SURFACES THAT ADHERE TO
EACH OTHER WITH PRESSURE ALONE
BUT STICK TO NOTHING ELSE

Cohesive papers, which adhere only to themselves and require merely the application of pressure to obtain a secure closure, are among the newest materials to claim the attention of packaging men. This type of material, first marketed and still supplied in the form of household rolls of self-sealing waxed paper for wrapping sandwiches and leftovers and performing other handy tasks; has now been adopted for several commercial packaging assignments and is under consideration for a number of others.

Particularly interesting to packagers are the resealing feature of the material and the fact that neither heat nor adhesive is required to obtain a lasting closure, permitting it to be used on extremely simple and easily maintained packaging equipment.

The cohesive coating which gives the material its unique self-sealing property is a specially compounded rubber derivative. Its use is not confined to waxed paper; the coating may also be applied to one side of many types of papers to render them self sealing. In addition, various laminations of self-adhering paper with other packaging materials are possible. Properties of the finished sheet can be "tailored" to obtain the desired degree of product protection,



DEMONSTRATING strength of seal, a 3-oz. bolt and wing nut are held by cohesive papers that have been tacked together at two points merely by pressing. The coating does not adhere to the bolt or to the fingers—only to itself. In foreground, the bag crudely made by folding a piece of cohesive paper and pressing the three open sides together holds 12 oz. of colored water.

the nature of the product dictating the quality of vapor barrier necessary.

At present, the manufacturer of the material is incorporating high vapor resistance in the barrier for improved product protection. The airtight closure obtained with papers thus treated makes it possible to maintain the required vapor pressure differential between the inside and outside of the package.

The self-sealing material is supplied in either roll or sheet form and can be printed and die cut on standard types of equipment. Specific data on seal strengths obtained with these papers are not presently available. It is important to note, however, that seal strength depends largely upon

the amount of pressure exerted in making the seal; the greater the pressure, the firmer the seal. Also, the width of the seal—the area of contact between the treated surfaces—has an important bearing upon the total strength of the closure. As the seal ages, its strength increases, it is claimed.

At below-normal room temperatures, an exposed sheet of the cohesive material temporarily loses its ability to make a seal, but this does not affect a seal already accomplished and the sealing property returns as soon as the material is restored to a temperature of 70 deg. F. or higher. If a package has been properly sealed at normal temperatures, the seal can

withstand temperatures as low as minus 60 deg. F. without losing its strength. Although an exposed sheet will gradually lose its cohesive quality, the age stability of the material in rolls or stacked sheets is said to be excellent.

The cohesive coating, described as odorless, tasteless and non-toxic, may be placed in direct contact with food products, the manufacturers say. The U. S. Department of Agriculture is now checking the material for specific evaluation on toxicity. It should be pointed out in this connection that the material has been successfully used for food wraps in the home for several years and that flavor-transfer tests have failed to disclose any particular taste or odor problem. When large quantities of the material are opened in a confined space, a slight though not unpleasant odor may be detected, but it is quickly dis-

Due to the fact that pressure alone is required to obtain a good seal with this type of material, it is particularly adaptable for forming flat, essentially two-dimensional packages for such products as cut film and carded items. In addition, the cohesive papers lend themselves readily to a continuous type of sealing operation. Such sealing, in effect, merely requires that the object to be wrapped be placed between the treated sides of two webs of material and that sealing pressure be exerted along the sides of the object by means of soft rubber rolls or some other suitable arrangement. The actual sealing is a purely mechanical operation requiring no heat. Provision may also be made to cut each sealed package off automatically after the seal has been completed.

The cohesive material appears to offer special adaptability for the production of small unit packages. Experimental "one-shot" packs of such products as coffee and sugar suggest the types of products which might be thus handled and at least one special machine is under development to handle unit packs of this type. It is also interesting to note that the material may be run on many existing types of packaging equipment which are equipped to handle heat-sealing wraps. In such cases, the heating elements may be turned off so that seals are made by pressure alone, without making any basic alterations in the equipment itself,

The fact that no heat is involved

in effecting a closure with this type of material is of special interest in connection with the wrapping of such products as ice-cream bars, chocolates, etc., which are easily damaged by exposure to heat.

A wide possible field of application for the cohesive papers is seen in many types of self-sealing wraps, such as bread wraps and inner bags for cereal cartons, where effective and easy reseal would prevent drying out and loss of flavor after the original package had been opened.

Multiple-unit packs of small items, individually separated by intermittent sealing of the material, are easily made up with cohesive papers by means of properly designed pressure rolls or other sealing means. One example of this technique is an experimental package for candy suckers, so spaced between layers of the paper that the candy may be removed one unit at a time by tearing it off from the others.

Another package now being studied would contain a supply of salt tablets to be carried by individual workers to combat heat exhaustion. It would contain perhaps eight of the tablets, so that the worker could remove and take one each hour during hot-weather periods. It is pointed out that the individual sealing of the tablets within a water-vapor-resistant package would protect them against high humidity and prevent them from

sticking together, as frequently happens with unwrapped salt tablets in factory and office dispensers.

For peanut brittle

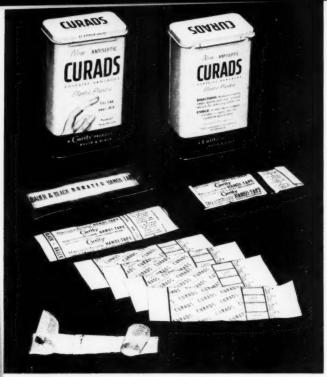
One of the first organizations to utilize the cohesive paper in an actual commercial package is King Cole Candies, Inc., Chicago, which is using the material for automatically wrapping %-lb. slabs of peanut brittle.

Four of the slabs are packed in a 1-lb. set-up box which is cellophane overwrapped as a further means of preventing moisture from reaching the highly hygroscopic candy product. Prior to adopting the cohesive wrapping material for this purpose. the company made use of glassine bags or envelopes which were closed merely by folding the flap down. Four or five operators were required to place the portions of peanut brittle in the bags and close them. The present packaging set-up, requiring only one operator to handle the specially designed equipment, automatically seals the slabs of candy between layers of the cohesive-coated waxed paper as fast as 80 units per minute.

In addition to speeding up the packaging operation and reducing the number of workers required, the new method affords better product protection than was formerly obtained with the glassine envelopes. Another advantage gained is the cushioning

PEANUT BRITTLE in ¼-lb. blocks is protectively sealed in paper that is cohesive-coated on the inside and waxed on the outside. Special machine makes four-side pressure seal at the rate of 80 packages per minute, avoiding the heat-sealing process which might affect the product.





STERILIZING HEAT will not effect the cohesive paper wrap now used on the Bauer & Black Curads bandages illustrated in foreground. Glassine and glued-paper wraps previously used (background) tended to become sticky and adhere to bandage during autorlaving that follows packaging.

effect of the sealed borders of each %-lb. unit. When the four pieces are placed in the boxes, these margins fold back, providing a cushioning effect at the edge which helps to avoid shifting and breakage of the product in shipment and handling. A printed slip placed in each box calls attention to the sealed inner packs, pointing out that "all of the crisp, wonderful flavor of an original Southern recipe is 'sealed in each layer.'"

The machine used by King Cole for this packaging operation was developed under the direction of L. N. Duryea, an executive of the firm, and built to the company's own specifications.

Although the complete details of its operation are not available for publication, it can be stated that the \(\frac{1}{2}\)-lb. pieces of peanut brittle are placed on an infeed conveyor having posts or stops which index them in proper position. As the units move along the conveyor, they are brought

between two webs of the cohesive paper stock fed from continuous rolls. Then the edges are automatically sealed by sets of revolving rollers which press the sheets of material together along the margin. After the seal is made, each package is cut off, ready to be packed in the 1-lb. boxes. The paper used for this application is 30-lb. stock, waxed on one side and cohesive coated on the other. It provides a tight seal around the bonded margins, but does not adhere to the candy. No printing is applied to these inner wraps.

For antiseptic bandages

Another packaging program involving the use of the cohesive material is in connection with adhesive bandages. This application was pioneered by Bauer & Black, Chicago, after extensive experimentation and is now being used for several types of adhesive bandages, including Bauer & Black's new Curads, an antiseptic

bandage which uses a flexible cast vinyl film rather than fabric as the backing material. Research by Bauer & Black confirmed that the sclf-sealing package, which is printed by the aniline process, successfully withstands sterilization, maintains an effective seal over an extended period and can be run efficiently on the same specially designed equipment formerly used to apply a heat-sealed wrapper to the bandages, thereby reducing operating and maintenance costs.

In the early days of adhesive bandages, B & B placed them manually in a glassine envelope having an unsealed flap. The next step was the adoption of post-sterilized sealed packages, which were automatically applied and glue sealed. Although these wrappers performed satisfactorily, they required an excessive amount of paper and were relatively slow to apply, necessitating two wrapping machines in conjunction with each bandage-making machine. Adoption of heat-sealed wrappers provided the desired speed, enabling one wrapping machine to keep pace with each bandage-making unit.

However, B & B packaging specialists felt that still further improvements were desirable. One disadvantage of the heat-sealed wrappers was the fact that during the sterilization process, when the wrapped bandages were subjected to steam within the autoclave, these wrappers had a tendency to become tacky and adhere to the bandages. The company's newtype wrappers, which are applied rapidly on the automatic equipment. have all the advantages of the heatsealed type and emerge from the sterilization process without any ill effects.

The material being used on the Bauer & Black adhesive bandages consists of 16-lb. folio-weight sulphite with cohesive coating on one side. After being printed, the wrappers are slit to the required widths to fit the B & B wrapping equipment. They carry a repetitive design featuring the Curads trade name printed in red.

The advantages demonstrated by these two vastly different applications are expected to lead to a host of other uses for this new and potentially important packaging paper.

CREDITS: "Wax-Seel" cohesive papers, Munising Paper Co., Chicago. Printing of Curads adhesive bandage wrappers, Johnsos-Coppock Co., Skokie, Ill.

'Name' appeal

PACKAGES DESIGNED FOR PERFUMES AND TOILETRIES

'PREFERRED AT THE STORK CLUB' BRING CAFE-SOCIETY

GLAMOUR TO THE CORNER DRUG STORE

New York's Stork Club acquired its aura of special glamour partly because of a practice which Sherman Billingsley, owner and manager, started about 15 years ago of giving perfume and other expensive presents to big-name guests. The practice attracted other big-name patrons and the columnists, who gradually created a nation-wide idea that the Stork Club was the acme of swank—a place where rare treasures might be laid in your lap at a nod from Sherman Billingsley.

Other guests began asking, discreetly, whether they might buy some of the famous gifts—among them an exclusive French perfume called

Sortilege (Bewitching).

It was a build-up too good to miss when Cigogne, Inc., the importers of Sortilege, made arrangements recently to distribute their perfume over cosmetic counters nation-wide. They enlisted not only the brand name made famous at the Stork Club. but also the personal endorsement of Sherman Billingsley and-for good measure-the names of Arthur Godfrey (of radio and TV fame), Morton Downey (the famous tenor) and Steve Hannagan (a noted publicist). The four men, all identified in the public mind as part of the Stork Club 'set," are reported to have a financial interest in the venture, which includes not only Sortilege perfume, but cosmetics and toiletries for both men and women produced under the direction of Fred W. Ohse, executive vice president of Cigogne.

From this background sprang the package-design problem. The conventional treatment of pastel colors and feminine frills was obviously not appropriate. Furthermore, the overall design theme had to be suitable for both women's and men's items.

The designer's anwer was to bypass color entirely and use stark black and white, boldly contrasted by the use of geometric patterns—diagonal effects for the Sortilege items and checkerboard arrangements for the men's line. A high-quality appearance is achieved by the use of acetate laminated box coverings that give high gloss and prevent shop wear of large areas of black printing. Linings are of gold-colored and gold-striped papers. All identification copy, which is kept to a minimum for smart simplicity, is stamped and embossed. All bottles are made in France.

The "big-name" appeal is provided for the men's packages by the use of vignette illustrations of Godfrey, Billingsley, Hannagan and Downey in the white squares of the checkerboard effect, tied in with the brand name "Their Preference."

Distinction is provided in the Sortilege line by the use of a transparent acetate box, gold decorated and made in the shape of a lantern which contains an amusing enameled wood figure of a stork wearing a top hat, holding the bottle of perfume.

All of the packages, naturally, carry the slogan, "preferred at the Stork Club." With this testimonial backing and plugs from Godfrey over radio and TV, sales are reported soaring.

CREDITS: Design, Emily Oppa, New York. Box wraps, printed, stamped and laminated by Don Wallace, Inc., New York. Set-up boxes for women's line, A. Dorfman & Co., Inc., New York, Men's combination box, Miro Container Co., Brooklyn. Liner papers, Lachman-Novasel Paper Corp., New York. Lantern package acetate box, Shaw-Randall Co., Inc., Pawtucket, R. I.; Facil-Fab lining, Facile Corp., New York; wood stork figure. Woodworkers of Weld, Weld, Me.; floral decor, Aster Flower Co., New York. Shaving bowl, Royal Mfg. Co., Chicago. Shaving-bowl box and soap box, C. Kroeck Paper Box Co., Chicago. Custom packing of men's line, Allen B. Wrisley Co., Chicago.



BASIC DESIGN of the Sortilege line, in stark black and white with gold, is illustrated by this combination set box. Cover paper is acetate laminated.

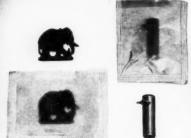


MEN'S LINE has vignettes of Godfrey, Billingsley, Hannagan, Morton Downey. Shave bowl is re-use Stork Club ash tray.

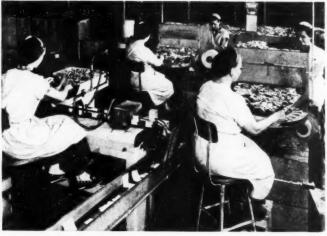


ACETATE LANTERN box reveals an amusing stork figure which associates the product with the famous New York night club.

Cracker Jack



PACKAGES FOR PREMIUMS are tissue-thin paper with a heat-seal coating. They act as a health safeguard to prevent child from swallowing small objects by mistake along with candy. Flat objects like elephant emblem at left are handled on machine specially developed by Cracker Jack; more difficult shapes, like a whistle, on a standard machine.



OPERATIONS PHOTO shows one standard conveyor-type machine (left foreground) packaging bulkier items and two special rotary machines for flat objects, which are dual units with two operators each, capable of 260 packages per minute. Note conveyor belt taking random mixture of wrapped items to the final packaging line. These five machine operators replace 70 former hand wrappers and handle entire Cracker Jack output.

To millions of youngsters, one of the biggest thrills in opening a box of Cracker Jack comes when the novelty premium found in each package is drawn forth. The additional sales appeal of this little toy, which might range from a molded plastic soldier or top to a novelty card game, has played an important part in the merchandising of this familiar confection since it was first added to the package in 1908. In order to make it easier for the child to locate the toy, the company now plainly indicates on the outer wrapper which end of the box contains the premium.

The procurement, handling and packaging of premiums comprise an important activity at the big Cracker Jack Co. plant in Chicago, where all manufacturing and packaging operations are conducted. To keep the novelty appeal at high pitch, new types of premiums are constantly being introduced. It is estimated that during 1950, the company made use of more than 300 types of premiums.

Many of these are small plastic or metal novelties which now are being separately wrapped before being placed in the carton. The purpose of this wrapping is to aid the child in locating the item and to prevent it from being accidentally placed in the mouth along with the candy-coated confection. Toy fans, card games and similar paper items which are larger in size do not require individual packaging.

These premiums, or favors, are necessarily low-cost items and the packaging also must be done at an extremely low cost. In order to hold the line against inflationary forces and keep Cracker Jack selling competitively, the company has made every effort to keep packaging and handling operations on an efficient basis. A complete modernization program covering all packaging equipment and activities is now under way.

One basic recent move along this line involved a change-over from manual to semi-automatic packaging of those premium items which require wrapping. Whereas approximately 70 operators previously were required to wrap the toys by hand, this phase of the company's operations is now handled by three wrap-

ping machines using a total of five operators. One of these units is of standard design, while the other two were specially designed and built for the Cracker Jack premium-packaging line.

Prior to the packaging operation, an assortment of plastic and metal premiums is dumped on inspection tables and checked to eliminate imperfect pieces. Then the premiums are brought to the wrapping machines in large fibre drums. The machine operators, in turn, feed them into the wrapping equipment.

It is particularly important that the premiums be thoroughly mixed before they leave the plant, so that there will be little, if any, duplication of novelties in the final shipments, which consist of 24, 50 or 100 boxes packed in corrugated shipping cartons. Part of this mixing takes place during the inspection process and the packaging-machine operators carry it further by loading the premiums into the machines in random order.

Each of the two special machines on which many of the flatter metal and plastic items are wrapped is a

premiums

EACH TINY FAVOR IS NOW PROTECTIVELY WRAPPED BY
LOW-COST MACHINE METHODS BY AMERICA'S LEADING
EXPONENT OF THE PREMIUM-IN-A-PACKAGE

tandem unit having two operators, with each side functioning independently. The machine is so designed that each operator works before a flat table surface on which the premiums are dumped. Toward the outer edge of each table is a countersunk section in which a compartmented turntable or "merry-go-round" rotates horizontally. Only a segment of the turntable is exposed; the remainder is out of sight beneath the table surface. The job of the operator is to slide the premiums individually into the rotating compartments. The rest of the packaging operation is entirely automatic.

Items placed in the pockets of the turntable are transferred to another compartmented wheel rotating in a vertical plane. This wheel, in turn, deposits the premiums at regular intervals on a moving web of lightweight waxed paper. As the items move along, another continuous strip of paper covers them and the moving webs then pass through a set of roller-type crimping and sealing dies which heat seal the two layers of paper together on all four sides of each premium. Finally, the paper is cut into individual packages by a set of revolving knives and the packages are ejected upon a conveyor belt. Each side of the machine wraps a maximum of 130 premiums per minute, for a total of 260 items per minute or more than 500 premiums each 60 seconds for the two machines.

Premiums which are wrapped on the two specially designed machines must be essentially two dimensional so that they do not tend to punch through the paper when the seals are made. The finished size of the packages produced by this equipment is approximately 2% by 3% in., providing sufficient leeway to accommodate premiums having a considerable size.

range, as indicated in an accompanying photograph.

Bulkier premiums such as whistles, which would not handle satisfactorily on these units, are packaged on the other standard machine. On this unit, the operator places the premium in individual compartments carried by a conveyor. This machine, operating at a speed of 60 units per minute, automatically forms a package about each item and seals it. Premiums from all three machines are discharged on a conveyor belt which carries them past bins of other premiums requiring no packaging. Additional operators scatter these premiums at random on the moving belt to insure that they will be thoroughly intermixed when they reach the end of the line. There is also a small amount of hand wrapping, requiring two operators, toward the end of the conveyor line. Items to be hand wrapped are laid on a pre-cut piece of paper and the paper is simply wadded around them to create the package.

Premiums are then taken to the main packaging lines, where they are placed manually in the bottom (which later becomes the opening end) of the Cracker Jack inner carton before the confection is filled and the two waxed-paper wraps applied. Finished packages then move via conveyor to three automatic machines which load them into the shipping cases and seal the cases ready for shipment.

The shipping cases, which formerly carried only the name of the product and a minimum of printed information, now bear a printed reproduction of the familiar package and a group of typical premiums. Officials of the company point out that the new design takes full advantage of the advertising value of the cases, which

Gradiore edit

ASSORTMENT of typical plastic premiums, all now machine wrapped, is shown with the current Cracker Jack package, which directs user to open box at end where premium is located, as an added safeguard against mishap.



COLORFUL PRINTED shipping cases are recent improvement, helping to merchandise brand name and emphasizing vast variety of premiums. They are often used to build displays.

are seen by many persons between the time they leave the plant and the time they reach the retailer, and make ideal mass displays.

CREDITS: Special premium-wrapping machines developed by B. J. Christeck of Cracker Jack in cooperation with TAB Engineers, Inc., Chicago, and built by Deltron Tool & Engineering, Inc., Chicago. Wrapping machine for bulkier premiums, Bartelt Engineering Co., Rockford, Ill. Shipping containers, Stone Container Corp., Chicago, and Carton & Container Div., General Foods Corp., Battle Creek, Michigan.

Packaging's Hall of Fame



THIRTY-FIFTH OF A SERIES

DR.LYON'S

Dr. Lyon's tooth powder is the senior dentifr.ce in the \$85,030,000a-year market for tooth cleansers. It was introduced the year following the end of the Civil War and pre-dates the emergence of any other tooth cleanser now sold in nation-wide distribution.

Year in and year out, over its 85year history, Dr. Lyon's has been at or near the top in sales rankings of national brands of tooth powders.

For 72 years the product has been packaged in lithographed metal cans bearing a trademark of classic beauty and timeless simplicity—originally a likeness of the founder's wife, Pamela.

A metal container with a dispensing cap introduced in 1891 was so ingeniously conceived for product protection, consumer convenience and sales appeal that today the 1951 counterpart reveals less than half a dozen changes. The 1891 container, using 1951 package design, would still be a highly acceptable package by practically every standard of today's practice. Few if any packages of similar age have a better record in regard to longevity of basic style and function.

The pioneering status and continuous leadership of Dr. Lyon's tooth powder richly justify this product's nomination to *Packaging's Hall of Fame*. Dr. Israel W. Lyon, a practicing dentist who conceived the idea of dental powder for home consumption, pioneered use of the metal can in the dentifrice field, thereby helping usher in an entire new era of packaging in the cosmetic, drug and toiletry field. His invention of a "telescopic meas-

uring tube" dispenser cap on metal cans was a packaging first that has had profound and continuing influence on the development of package dispensing devices of all types.

For one thing, the self-measuring dispenser demonstrated long before any established body of packaging principles had evolved that the buying public would try a novel packaging feature, especially if the feature made the product easier to use, and it would do so to the tempo of rapidly rising sales.

Package performance alone, of course, could not assure repeat sales; that remained and still remains a function of the product. Dr. Lyon's dispensing closure, however, demonstrated at a time when America was still not package minded that package and product performance could be teamed to win and hold public favor.

Trail-blazing standards

The dentifrice field, as well as packaging, is indebted to Dr. Lyon for the pioneering use of ethical standards in promoting his product. At a time when the most ridiculous liberties were being taken with claims for patent-made preparations of all types, the doctor launched a one man crusade against quackery and bunkum. The part he played in building consumer confidence in packaged goods cannot be overestimated. His basic advertising rule-facts unadorned and simply stated-has now been in force for 85 years. It has been successful in the face of the stiffest-and not always highly principled-competition and is, for the record, one of the bright spots in the history of toiletry promotion.

The doctor was not only a crusader for honesty and good taste in advertising; he was also a practical vision-



FIRST PACKAGE, dating back to 1866, was a lithographed seamless metal container with a hinged lid. The oval-shaped cake of solidified powder was scored into sections and a metal tool was provided for cutting bite-sized tablets. The can was packed in a telescope set-up box.

NOMINATED FOR PACKAGING'S HALL OF FAME BECAUSE:

- · Its concept of packaging as a means of carrying professional care into the home was the foundation of the \$85,000,000 dentifrice business.
- · Its ethical approach to package design and merchandising has kent sales leadership for 85 years.
- · Its famed telescopic dispensing cap 60 years ago proved the value of package convenience features.
- · Its successful introduction of a metal can for deutifriese had a profound influence on package forms for many other products.



tity. Famed telescoping dispenser top has given way to a simple oval aperture. Ammoniated powder uses a polyethylene cap with premium tab.

ORIGINAL DRAWING from which trademark was taken in 1866 is still in the company's files. Mrs. Lyon was the model for this fine-line penand-ink drawing in the style of the period. In a modernized and simplified form, this reproduction is still the trademark on every package.

ary who dedicated his business to the belief that people should brush their teeth. His idea, which was really quite radical for its day, helped open the way for concepts of personal hygiene that today are fundamental to American living standards and to the success of thousands of enterprises engaged in the manufacture and sale of preparations for personal use.

By insisting that dental hygiene was not limited to the dentist's office and by marketing a packaged product that made it easy to clean teeth at home, the doctor helped start Americans on a daily routine now ob-

served by practically everyone who has teeth. Competitors in the dentifrice field and manufacturers of countless other toiletries have since exploited the idea of personal hygiene so thoroughly that today we are the most hygiene-habit-minded consumers to be found anywhere.

The good doctor with his sense of what was right in packaging and in the use of advertising to promote brand name, trademark and package laid down lessons that are still highly significant in today's multimillion-dollar markets for personal-use items.

Dr. Israel Whitney Lyon had

studied dentistry in New York. An experienced practicing dentist, he went West in the 1850s to the California gold fields, where, as he said, "I stuffed gold into the miners' teeth and took it out of their pockets."

(TRADE MARK

Back East in 1866, when the American Dental Assn. condemned liquid dentifrices containing large amounts of alcohol, Dr. Lyon conducted research and produced a dentifrice that his fellow dentists would approve without reservation.

The doctor's first preparation came in the form of an oval-shaped cake of solidified powder snugly packaged in a flat metal container. Even then, the doctor was conscious of convenience features. The caked powder was scored into sections and a small tool for cutting off the "regulated dose" was packaged with the cake in the container.

Directions inside the lid of the hinged, seamless metal container read, "Break off a tablet with the cutter and place it between the front teeth, moisten with the tongue and press it on the brush (previously wet) then brush thoroughly inside and out. (50¢)."

For a period of five months, the trademark on this first package was a picture of a lion holding a tooth brush. Then, seeking an emblem of greater simplicity, Dr. Lyon decided to use a cameo-style picture of his classic-featured wife. This trademark, so remarkably effective and timeless in its subtle suggestion of character and personal neatness, has been used continuously from 1866, with only

minor changes to make it appropriate in modern design. The original pen-and-ink drawing from which the first trademark was made is reproduced on p. 89.

A sales message prepared by the astute packager, Dr. Lyon, read: "For neatness, convenience and delicacy of flavor, these tablets have no equal as a dentifrice. Being portable, they are especially convenient while traveling. Any number of persons can use from the same box with neatness and propriety."

It is significant to note that the doctor showed in his first packaging efforts a grasp of the basic packaging principles for a dentifrice. Convenience, controlled economy of use and sanitary use by every member in a family are major requirements in dentifrice packaging today—whether the package be a can or a collapsible tube.

The doctor was quick to make effective use of testimonials from fellow members of his profession. Testimonials had previously been used with reckless abandon for a widely advertised liquid dentifrice—Sozodont. Endorsements by clergymen and prominent figures of the day were used by Sozodont in conjunction with scare copy, jingles and harem-scene leg art.

The doctor, for his part, concentrated on testimonials from his profession. His advertising, while forceful, was almost painfully direct. In answering a request in 1867 for a sample of his product from the then mayor of New York, he wrote:

"I make no secret of the ingredients. They are simply prepared chalk, orris root, castile soap—all harmless and at the same time effectual in cleansing the teeth.

"I claim no advantage for it over any other good tooth powder except the portable form in which it is put up. My object is to give the public the best and neatest dentifrice and to drive out of the market a host of worthless articles which are now being used and which are universally condemned by our profession."

Package evolution

In 1874 the doctor introduced his product in loose powder form. He first supplied the powder in a small handblown green glass bottle, topped by a cork. The bottle was soon superseded by a round lithographed metal can with a screw cap. This container





1874

122

QUEST FOR CONVENIENCE led to the adoption of a green-glass bottle for the powder and a glass jar for the dental cream—the cork having a spoon attached. The 1883 lithographed metal can had a screw-cap closure and shows the label as it has survived almost identically for 45 years.



1925

1928

1937

TREND TO MODERN DESIGN was interrupted startingly in 1928 when Watkins Co. bought the product and reverted, briefly, to old-style label, for recognition purposes. Telescopic cap, now in one piece, was still being used as modern design evolved in 1937.



1801

FAMOUS telescopic measuring tube was one of the first of modern packaging's convenience features. It appealed to thrifty Victorians and sales responded enormously. This top, with slight changes, remained a Dr. Lyon's package feature 51 years.

was patented by Somers Bros. of Brooklyn.

As developed by the Somers brothers-Dan, Joe and Guy-the lithographed metal can, itself, was a distinct novelty in the '70s. Packagewise a vast new horizon was to open for this type of container, especially in the toiletry field. Only a few years before, in the pre-Civil War period, the tin can was produced by craftsmen for a very limited market. Drugs and toiletries were, for the most part, individually compounded by a druggist. Paper and sometimes glass containers were used, but little thought was given to pre-packaging and merchandising the product.

The growth of the patent-made drug and toiletry business, plus the availability of improved containers to permit packaging for mass distribution, opened wide the doors of opportunity to both the toiletry-manufacturing and can industries.

The advent of the lithographed metal can was especially important in the toiletry field. Here was a non-breakable container whose label was part of the can itself. Design possibilities for decoration, brand and trademark promotion were unlimited. Many of the containers were excellent for re-use and some of them. as Dr. Lyon soon demonstrated, could be adapted to an entirely new function in packaging—that of dispensing a measured quantity of the product.

From the day of his first packaging efforts, the doctor had been dedicated to the principle that his dentifrice should be éasy to use. The powder in tablet form carried off this idea. The next step was the packaging of loose powder in a bottle. Then he offered a dental cream packaged in a small glass jar. This was shortly before the time that the Sheffields and others were perfecting collapsible tubes for tooth pastes.

A feature of the glass jar was a dispensing spoon affixed to the cork closure, following much the same principle now employed by a brand of liquid shoe polish that has a dauber attached to the stopper. When the stopper was removed from a bottle of Dr. Lyon's dental paste, the stopper became the handle for the spoon, which was used to remove a measured quantity of the paste.

In 1891 the doctor introduced his most important packaging innovation -a new type of metal can for tooth powder. The can had a pull-up



WARTIME INGENUITIES

VICTORY PACKAGES of glass and paper were employed when wartime shortages prevented the use of metal containers on the civilian market. Metal was reserved for the millions of cans shipped to the Armed Forces.

sleeve, dispensing-type cap. The device controlled delivery of the powder through two small side holes. The doctor called his device a "telescopic measuring tube." Directions were: "Pull up the cap, fill the tube, then empty out the powder, press cap down."

Here was, at that time, the ultimate in convenience for users of tooth powder. Dr. Lyon, himself, must have been immensely pleased with his discovery, for as a practicing dentist he firmly believed that powder and not paste was the correct form for a dentifrice.

The dispenser cap, made of nickel-plated brass, was also a decorative feature. It had tremendous novelty appeal. Its utility boomed sales and its success awakened new interest in the packaging potentiality of metal containers. Can companies like Taite & Sisler in Philadelphia (now the Clarke Can Co.) were, by 1900, manufacturing tooth-powder cans at a rate of 5,000 a day. Dr. Lyon's sales by this time had risen to \$184,000 a year, while the sale of tooth tablets by this time had become practically non-existent.

The choice of a metal can for packaging tooth powder was eminently well suited, Dr. Lyon thought, to the requirements of the product. His reasoning was along this line: Cans keep out moisture and dirt and help keep in flavor. Cans are strong and durable, yet light in weight and are easy to handle. The fact that they can be filled before the shoulder-piece top is put on makes for ease and speed in filling.

As far as consumer use was concerned, the metal container had many



DR. LYON HIMSELF was a practicing dentist of Civil War days who took up the manufacture of an improved dentifrice because he was annoyed at the wild advertising claims made for the imperfect liquid types then being introduced. He originated tooth powder, fathered many basic concepts of modern packaging, crusaded for honest advertising and was responsible, more than any one man, for making tooth brushing a daily ritual in the home.

desirable features. It could be handled by wet hands without injury to the package or contents. It would not break if accidentally dropped. It would be easy to hold and, above all else, the dispensing feature would make for sanitary use and would enable the user to apply the powder with a minimum of spilling.

The telescopic dispensing cap introduced by Lr. Lyon in 1891 was so well designed from a functional packaging standpoint, and so famous and popular, that it remained in use for 51 years, until 1942—possibly a record for continuous use of one special type of package. During that time there were only a few major improvements, such as the introduction of a one-piece top in 1928, made possible by new techniques in the working of metal.

The doctor, himself, was actively engaged in the promotion of his product until 1907, when he died. His two sons carried on the business until 1928 when it was sold to The R. L. Watkins Co. In 1934, Sterling Drug, Inc., acquired Watkins and made the company one of its operating divisions.

Production

Up until the time that Watkins took over, the packaging, save for one automatic cartoner, was done virtually by hand. Watkins soon purchased an automatic filler and other equipment for mechanizing the packaging lines. Today, regular powder is filled on mechanized lines that operate at a speed of 130 units a minute.

The round can for the 10- and 25-cent sizes was maintained until 1940. An oval shape for the 50-cent size was brought out shortly before 1928 and in 1940 the oval shape was adopted for all sizes of cans, for equipment had been constructed that could economically handle the more difficult job of producing oval bodies.

The oval-shaped can is desired from a merchandising point of view, because it presents greater display surface when stocked on shelves and counters and in general it is thought to be more distinctive in appearance and handier to store in medicine cabinets. However, its shape presents problems on the packaging line, since oval cans, without special provision, have a tendency to jam, bind and tip on conveyor lines. At the Lyon plant conveyor lines have been specially engineered to overcome some of the difficulties in handling.

Empty cans, received in shipping cartons, are removed by hand and placed flat on their sides on the conveyor line. The line turns the cans end to end and feeds them in a vertical position to the filling machine on the floor below. The filling machines are auger-type volumetric fillers.

When the cans are filled, tops and caps are applied by machine. The cans are then individually cartoned along with an insert folder. Individual cartoned packages are bundled and packed in shipping cases.

Frequent checks are made on the weights of filled cans by a girl operator. The chief concern in filling is to hold weights at a slight overage. This practice permits the lines to be run at maximum speeds, since variations in filling levels, as long as they are on the plus side, call for fewer adjustments, with consequent reduction in down time.

Watkins engineers, in 1937, developed an electronic device that would detect underweight packages. This unit, which operates in conjunction with a scale to detect and eject lightweight packages, was one of the first successful machines of its kind. It is still in use.

Design changes

Through the years, the lettering and coloring of the Dr. Lyon's package have undergone changes to keep pace with the times. However, blue has been the identifying color for more than half a century and recognition features in general have been consistently preserved.

The present container for the regular tooth powder employs a robin's egg blue background. The brand

Hexibility is keynote of today's packaging lines



SPECIALLY ENGINEERED conveyor speeds transfer of cans to filling machines at Rahway, N. J., plant. Cans are turned end to end on belt for gravity feed, without jamming, to the filling line on floor below.



MODERN EQUIPMENT fills, caps, cartons and bundles Dr. Lyon's powder at a rate of 130 cans per minute. The two lines shown in the photo above handle al! put-ups. Adjustability and quick change-over are the prime requisites for the lines.

name, printed in white poster-type lettering, appears on a dark blue panel. The trademark is printed in white and dark blue. The over-all appearance is neat and pleasing. Excellent identification is afforded.

Design changes have continuously been in the direction of greater simplicity, although there was one brief, nostalgic throwback, in the late '20s, to the 19th century.

Reasons for the throwback design (it appears under the date of 1928 in the accompanying illustrations) are not clear, but it was adopted by the Watkins Co. when that firm first took ownership of the brand and it seems likely that it merely reflects the great respect of the new owners for the long-standing fame of this label and their wariness of endangering users' recognition during the period of transition to a new ownership.

At the same time, Watkins was keenly alert to the fact that packaging procedures do not stand still. As previously mentioned, the company immediately introduced machinery to replace hand methods of packaging and in the first year of the new ownership brought out a one-piece telescoping top, made possible by improved techniques in metal working and decidedly more economical to make and use.

However, the telescoping top went the way of other unessential package accessories during the first pinch of the World War II metal shortage and it has never been revived. Since consumers became well educated to the use of the package without this feature during the war years and were also by that time so familiar with the powder form of dentifrice as to need no special convenience feature to induce them to use it, its revival in the face of rising postwar production costs seemed unjustified.

The convenience principle remains, however, in the form of an ovalshaped, rather than round, aperture in the present can top, which Sterling Drug feels makes it easier to pour out a restricted quantity of powder.

The present containers, due to scarcities of tin, are fabricated from blackplate and require a special interior coating. The necks of the containers have the small oval-shaped opening at the top that helps control the dispensing of the powder. The cap is a slip-on type. In postwar years the cap was made of bright nickel-plated brass, but again has given way



DR. LYON'S PROMOTION is famous for its straightforward, completely professional approach. This selling technique, always something of an anomaly in the holly competitive dentifrice field, has steadily built consumer confidence in the product, has advanced the practice of dental hygiene and has kept Dr. Lyon's brand at or near the top for 85 years.

to shortages and controls and is now made of blackplate enameled blue. The closure liner is an absorbent multilayer pad of cellulosic fibres. This type of liner is designed to prevent powder from sifting.

Cartons for the current individual packages of regular tooth powder repeat the container design except that the cartons employ a band around the body of the carton and a top flap printed with metallic silver-colored ink to provide luminosity and thus enhance the attention-getting value of the shelf package.

Wartime packages

During World War II, tooth powders enjoyed increased demand at least partly because shortages of metals for collapsible tubes limited the output of tooth pastes. Dr. Lyon's adjusted its packaging to the severe shortages by adopting glass and paperboard containers. The company's ingenuity in mechanical changes to handle substitute containers was outstanding in the industry.

The "Victory Package—No Change in Net Contents" used a variety of ingenious sifter-type closures on the paperboard containers. Late in the war, when some metal became available, there were also paper bodies with metal bottoms. Every package adhered strictly to the family resemblance of prewar containers.

The task of keeping Dr. Lyon's on millions of tooth brushes during the war years involved tremendous adjustment and improvisation in packaging methods and equipment. The company's ingenuity in this respect was outstanding. Machinery built for filling and capping cans had to be adapted to the dozen or more "war baby" packages, At one time machinery for wrap-around labels on metal cans, salvaged from a scrap yard, was converted to spot labeling jars and automatically applying screw caps.

Now, with the experience of World War II again brought to mind by controls and scarcities, the Watkins Division's executives are deeply engaged in a study of how to produce packages automatically from non-essential materials.

Ammoniated tooth powder

In April, 1949, Ammoniated Dr. Lyon's Tooth Powder was introduced. This product, licensed by the Uni-(This article continued on page 190)



packaging DESIGN

A French way to protect velvet ribbon



Pre-packaged lengths of velvet ribbon imported from France reveal a new method to prevent crushing of the pile. Velvet ribbon has traditionally been packed on long, cumbersome reels, each containing 10 yds. of material. Cutting from these reels occasioned unnecessary handling and substantial shrinkage. The new package, containing a premeasured 1-yd. length, is designed to eliminate this shrinkage and to speed handling of the ribbon. The package, on which a patent is pending, is composed of a layer of heavy white paper along the edges, to which there is superimposed a narrow band of the same paper that has been pleated or fluted so that it rises approximately ¼ in. from the base. The ribbon is set between two pleated edges so that it fits snugly and then the entire unit, paper and ribbon, is wound upon itself. Thus the ribbon is suspended and protected against rubbing and matting. The unit is packaged in France by Giron Freres. French Velvets, Inc., are their exclusive representatives in the U.S. The package is being experimentally marketed in five widths of black satin-back velvet only.

Concealed wax permits improved label appearance



A year's successful selling appears to have justified the unusual pains which Libby, McNeill & Libby took to improve the appearance of the standard metal-end fibre can for Libby frozen fruits in syrup. The container has a gleaming pure-white background (including even the metal ends, which are enameled) against which a fine-detail, full-color vignette of the fruit appears. This fine printing is made possible by a special technique, in manufacture, of covering the waxed fibreboard with the printed label paper, so that it becomes an integral part of the can body-retaining all the functional properties of the wax coating, yet obviating its use on the printed surface.

CREDITS: Lithographed labels, G. A. Ackermann Printing Co., Cicero, Ill. Decorating of can ends, Caspers Tin Plate Co., Chicago. Fabrication of finished container, Sefton Fibre Can Co., St. Louis, Mo.

HISTORIES

Automatic pack for cuffs

Distinct merchandising improvements as well as economy of package production result from the new packages for Cuff-ettes, form-fitting translucent plastic cuffs. For many years this product was packaged in a cellophane or glassine envelope, sealed with paste or pressure-sensitive tape. Now it is automatically packed by machine. A two-color printed insert card fits around the back and folds over part of the face of the Cuffettes. A tight cellophane overwrap with heat-sealed ends completes the package. Back of the insert card carries sell copy, while the front prominently displays the trade name. A die-cut and scored paperboard display box that takes up a minimum of counter space shows the product standing up instead of lying flat, as in the former display.

CREDITS: Design and procurement of package, Workman-Powell, New York. Cellophane, E. I. duPont de Nemours & Co., Inc., Wilmington, Del. Packaging machine, Amsco Packaging Machinery, Inc., Long Island City, N. Y. Insert folder, American Lithocraft Corp., Jersey City, N. J. Display carton, Service Carton Co., Brooklyn, N. Y.



NEW



Self-service butter carton facilitates ¼-lb. sales

Effective display of quarter-pound sticks of butter has been achieved by Armour & Co. for its Cloverbloom butter by this new display carton holding 16 foil-wrapped quarters in two layers. This new 4-lb. carton enables the retailer to present a neat display of butter in the self-service dairy case to boost impulse sales among small-unit buyers. At the same time the carton keeps the quarters together, protects them from excess handling and from becoming shopworn, and eliminates the breaking up of a 1-lb. carton containing four quarters. Protection for the quarter-pound butter sticks is provided by aluminum foil wrappers that prevent absorption of odors and loss of moisture, thus helping to retain the freshness of the product.

CREDITS: Carton, Chicago Carton Co., Chicago. Foil wraps supplied by Rapinwax Paper Co., Minneapolis, Minn., using Aluminum Co. of America aluminum foil.





MECHANIZED FOR

Cracker packaging is more than a symbol of the passing of the cracker-barrel era; its current advancements continue to set valuable precepts for the entire packaging field

An outstanding example of progress along this line is provided by the Robert A. Johnston Co., Milwaukee, one of the nation's largest independent producers of crackers and cookies. The company is nearing the completion of a modernization program which will soon encompass all three cracker lines, greatly increasing packaging efficiency and effecting important economies in supplies and labor.

The Johnston organization, established in 1848, outgrew five successive plants before erecting its present seven-story building in 1920. With volume at record levels, plans for further expansion of facilities are now under consideration. Meanwhile,

throughout all manufacturing departments, it has long been a company policy to keep abreast of the newest developments in packaging. Indicative of this progressive outlook is the fact that Johnston, whose crackers and cookies are widely distributed to grocery outlets in Wisconsin, Michigan, Illinois, Iowa and neighboring states, was one of the first producers in the nation to adopt the quarter-pound inner cellophane wrap for crackers in December, 1949. Since that time, use of the sealed inner packs has become almost universal among cracker manufacturers.

Seven types of crackers—saltines, wafer flakes, grahams, Charms, oyster crackers, rye crackers and cheese crackers—round out the Johnston cracker family, with Charms heading the list from the volume standpoint. With the exception of the small oyster crackers, cheese and rye crackers, all are cellophane-wrapped in %-lb. units for increased protection and

freshness. In addition to the packages used for oyster crackers, there are 12 box sizes in the Johnston line, including Charms and Honey Graham crackers in 1/4-1, and 2-lb. units and Wafer Flakes and Saltines in 1/4- and 1-lb. units.

The attractive red-and-white folding cartons, providing immediate and unmistakable family identity, were styled by an independent designer. They are distinguished by wide redand-white bands which encircle the packages, with realistic, full-color, photographic product illustrations highlighted on the white panels. The principal label information is in red or white on the various packages, while the Johnston name, in script lettering with a large capital "J," is printed in yellow. The packages are printed by letterpress in three colors and varnished.

Johnston's package modernization program has been carried out in several stages. A major change took

^{*}See "Cracker-Filling Achievement," Modern Packaging, April 1951, p. 140.

JOHNSTON FAMILY in colorful new printed cartons with patented lock-tab construction are set up, filled, closed and glue sealed on automatic equipment.

place in December, 1949, when the company discontinued its former newsprint box with glassine liner and printed waxed overwrap and adopted a printed carton of self-locking construction. The new package, used in conjunction with a cellophane overwrap, simplified packaging operations and preserved the identity of the package in the home until the last cracker had been eaten. With the earlier package, product identity was destroyed with the removal of the outer wrapper. Introduction of the new-type carton released three girls from each packaging line for other duties in the plant.

As the final step in this program,

and gluing equipment can be installed. With the completion of the installation, thanks to the flexibility of both the carton set-up and carton closing and gluing equipment, the company will be able to switch rapidly from one box size to another to meet production requirements. The procedure described in the following paragraphs will then be followed throughout the cracker packaging department.

Upon leaving the reel-type ovens located on a upper floor of the plant, crackers are delivered directly to the packaging department by means of a continuous conveyor system. The freshly baked crackers, which must be handled carefully to avoid damage, arrive in the form of large scored sheets carried on flat trays. Before they can be wrapped, the crackers must be divided into units of four or six, depending upon the type being produced, and assembled into stacks

of the required thickness. This "break and feed" procedure is performed manually by four operators who handle the output of each oven. These women remove the crackers from the trays, divide them into sheets of the proper size and stack them between the vertical pins or drive buttons of the conveyors which carry the crackers to the automatic wrapping machines. The drive buttons are fabricated of red plastic rod stock so that in the case of any accidental chipping or breakage, fragments are easily detected in the cracker meal into which damaged crackers are later converted. The breaking and feeding operation is set up so that each pair of operators loads a single conveyor, with each of the two conveyors feeding a separate wrapping machine.

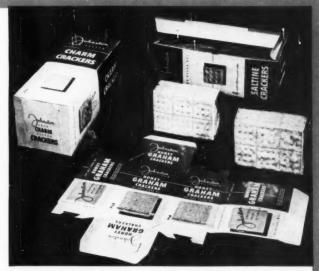
In setting up this part of the operation, it was necessary to provide a convenient means for both handling and loading the %-lb. stacks at the

CRACKERS

JOHNSTON'S NEW LINES MAKE PACKAGING
COMPLETELY AUTOMATIC AND DEMONSTRATE
IMPORTANT LABOR AND MATERIAL SAVINGS

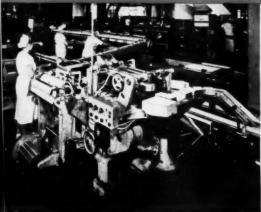
Johnston is now discontinuing the cellophane carton overwrap, releasing two additional operators on each line and making the packaging operation completely automatic from the time the 14-lb. inner packs are manually placed in the boxes until the closed and sealed packages are assembled and bundled for shipment to retail outlets. This basic change, made possible through the installation of newtype closing and gluing equipment, will result in the saving of a large volume of cellophane which may be diverted to the inner packs. In addition, the change-over will make the overwrapping machines available for other work in the Johnston plant.

At present, one of the company's three cracker-packaging lines has been completely converted to the new operation, providing a case study of its advantages. Cellophane overwraps on unvarnished cartons are still used on the other two lines, but will be eliminated as soon as the additional closing

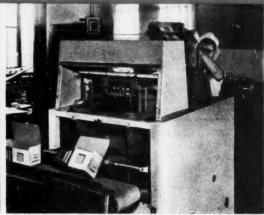


ALL THE PROTECTION is provided by moistureproof cellophane sealing each of the ¼-lb. units of crackers within the box. With the new carton, the former outside cellophane wrap is eliminated, permitting all the firm's allotment of cellophane to be used for the inner packs. The change-over also makes overwrapping machines available for other work.

It's all done with machinery



CELLOPHANE WRAP is applied by one of two machines like this one on the line. Four "breakers" in background feed \(\frac{1}{4}\)-lb. stacks of crackers to machines.



CARTONS ARE FORMED by this machine and are ejected upon the conveyor belt ready for filling. Machines, which can make changes for different carton sizes in 10 minutes, are mobile,

customary position of the regular operators, who were breaking the large sheets of crackers into sections of fours, and to deliver these stacks automatically to the wrapping machines in proper time. Another requirement was to provide visual inspection so that broken, burned or warped crackers could be eliminated and only salable crackers packed. Additionally, the loading operation had to be so arranged that the operators could work from both sides of the cooling section, since it was neither feasible nor convenient to reach over both sides of the cracker sheets. All these requirements were met satisfactorily with the pin-type conveyors, which operate through open troughs that facilitate inspection at any point along the line.

The wrapping machines wrap and seal the 14-lb. inner packs in 300 MST cellophane at a rate of approximately 60 packages per minute. They handle both graham and soda crackers with equal facility and may be changed over rapidly from one cracker size to another. Each unit has one operator-a "scrap and machine tender"-who keeps an eve on the wrapping operation by means of an overhead mirror and also sorts out imperfect or broken crackers before they enter the machine. Single crackers that become detached from the larger sheets are hand packed by these operators into cracker caddies which are supplied to such outlets as restaurants and soda fountains. Upon leaving the wrapping machines, the crackers are automatically conveyed to another station to be packed in the outer cartons. This phase of the operation is handled manually, as shown in an accompanying photograph.

The empty cartons which are moved past the packer via conveyor belt in a continuous procession are of a special double-end, lock-tab construction, with the exception of the 2-lb. sizes. The 1/2-lb. and 1-lb. packages are set up automatically from flat blanks by means of a quickly adjustable machine which accommodates a wide range of package sizes. The machine, which requires no operator and is periodically loaded with a fresh supply of carton blanks, can operate at between 20 and 75 units per minute and even faster on smaller packages, such as cookie trays. After setting up the cracker packages, the machine ejects them onto the convevor line with top flap open, ready for filling.

In setting up the cartons, the machine forces the blank through a female die by means of a reciprocating plunger. As the package is formed, the twin curved tabs at each end of the carton are inserted through diecut slots, forming a secure locking engagement. No adhesive is required in

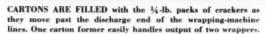
this operation, since the lock is entirely mechanical. The machine will operate unattended for about 10 minutes on a supply of ½-lb. carton blanks and 20 minutes on the 1-lb. size. About 1,000 blanks can be accommodated in one loading, Packages produced by this type of equipment, it is stated, provide the rigid protection and paperboard economy of a glued box, along with the traditional operating economies of a folding carton.

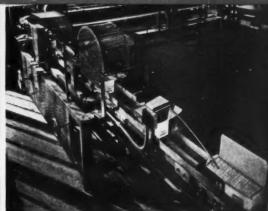
However, the type of lock usually used on the trays and cartons produced by this machine was found to be inadequate for the rather deep Johnston cartons on light stock. The carton supplier developed a special double lock which permitted the company to use this machinery, with all of its advantages of quick and easy size change, mobility and relatively low cost.

One of the most desirable features of these carton-forming units, according to Johnston engineers, is their extreme versatility. Changing over from one carton size to another can be done in approximately 10 minutes, simply by installing another die and plunger and adjusting the loading mechanism. The plunger change requires the removal of only two bolts, while the female die is mounted in the machine by means of four screws and is readily accessible. The loader,

in money-saving Johnston operation







CARTONS ARE CLOSED, spot glued and sealed on this new-type continuous equipment which made possible the elimination of the cellophane carton overwrap.

equipped with thumb screws, is quickly adjustable. By contrast, the machines used in previous years by Johnston to produce their cracker cartons required from two to four hours for change-over to another package size.

The carton-forming units are not permanently coupled to the packaging lines, but are mounted on casters and can be quickly transferred to any desired plant location, ready to operate as soon as the electrical connection is plugged in. They are usually set up beside the packing lines so that finished cartons are deposited on a conveyor just ahead of the actual packing operation. Machines of this type are widely used throughout the Johnston plant, not only for cracker boxes and cookie boats (which are later cellophane overwrapped), but also for flat trays used in some of the company's top-quality candy boxes. In addition to baked goods, the company produces candies and soda-fountain toppings.

The speed of the equipment is varied to suit the requirements of the filling operation. On the 1-lb. cracker packages, for example, the machine operates at about one-fourth its maximum speed, keeping pace with the output of two wrapping machines on the quarter-pound inner packs. When the line is running the half-pound packages, the carton-forming unit

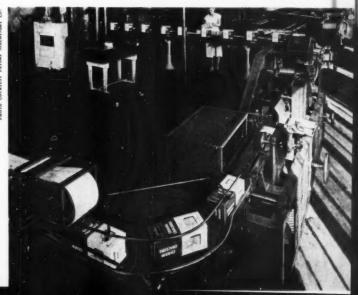
runs at about half its maximum out-

Although boxes used for the 2-lb. cracker packs are set up manually and not handled on the automatic carton-forming machines, they are closed and sealed on the same equipment as is used for the smaller box sizes.

After the manual filling operation, in which two, four or eight of the

%-lb. inner packs are placed in the printed package, the carton, with top flap left open, moves by conveyor to a new-type continuous carton-closing machine, which closes and seals the package automatically. In the Johnston installation, the unit is equipped with a gluing mechanism which applies adhesive at intermittent points (This article continued on page 197)

OVER-ALL VIEW shows the entire Johnston operation, from carton former, at left rear, to filling from the inner-pack lines leading from far right rear through the carton closer and onto the turntable (foreground) which sends the closed packages through a 20-ft.-long compression unit.



NOVEMBER 1951



PACKAGING

A round plastic container molded of cellulose acetate butyrate—red opaque top and clear transparent base—provides an efficient and colorful tool package for The Fellows Gear Shaper Co.'s gear cutter. The cutter rests over a projection in the base. The box, molded by the Fellows company, is unharmed by the protective coating in which the cutter is immersed before packaging. "Tenite" plastic, Tennessee Eastman Corp., Kingsport, Tenn.

The redesigned Boscul package reveals a new pictorial technique for the coffee can—the nose-to-neck portion of a young man's face obviously enjoying the flavor and fragrance of a steaming cup of Boscul Coffee. The new package combines appetite appeal with strong "sell-onsight" qualities. Design, Jim Nash, New York. Can, American Can Co., New York.

Union Starch & Refining Co.'s Pennant brand of Marshmallow cream, called Marshmal-o, now comes packaged in a new re-use glass tumbler with ribbed handy-grip surface and colorful label giving recipes and illustrating varied uses of the product. Glass, Armstrong Cork Co., Lancaster, Pa. Caps, White Cap Co., Chicago. Labels designed by Harry H. Farrel, Chicago, and supplied by U. S. Printing & Lithograph Co., Cincinnati, Ohio.

A tiny doll-house box for Nemo-kins—the new doll-sized Nemo Foundations by Kops Bros., Inc., that stretch to grown-up sizes—dramatizes this spectacular new corsetry item at the point of sale. The set-up box is color printed, with white patches of clouds for size and price markings. Box, Williamsburg Paper Box Co., Brooklyn. Printed jacket, Eldredge Co., Brooklyn.

Since the introduction of these colorfully printed cloth bags by the Aggeler & Musser Seed Co. for their special Love Bird Mixture, Double Recleaned Canary Seed and special Roller Mixture, sales of these bird seeds have shown a marked increase. Dealers attribute this increase to the strong point-of-purchase appeal and high-quality approach the packages. Bags, Bemis Bro. Bag Co., St. Louis.





Fluid on wheels

MOVABLE TANKS GET LIQUIDS TO PACKAGING LINE IN 'WORLD'S MOST

MODERN PHARMACEUTICAL-MANUFACTURING PLANT.' By S. J. Paradiso°

Fluid handling between manufac-turing and packaging operations has long been a headache in the pharmaceutical industry because of the many formulas and package sizes

that are prepared.

The Upjohn Co., which manufactures more than 100 fluid formulas with an annual volume well in excess of 1,000,000 gal., has adopted portable tanks to overcome some of the difficulties of bringing fluids to the packaging lines in its new plant at Kalamazoo, Mich. In the former plant, traditional-type installations employing fixed piping and gravity flow were used. From a packaging standpoint the innovation is one of the outstanding features of what is regarded as the world's most modern pharmaceutical-manufacturing plant.

Upjohn's portable-tank method of transporting fluids has been in use for more than six months and the fluids manufacturing and packaging departments are extremely well pleased with performance. The tanks moved by a hand-operated fork truck are easy to maneuver, while scheduling for production and packaging is found to be more flexible.

One of the most attractive advantages of the system is the labor saved on clean-up work. The portable tanks are moved to a wash-deck area where they are hosed and scrubbed down in a matter of minutes, in comparison with the laborious and timeconsuming cleaning of pipe systems to different packaging lines from all the manufacturing tanks. Uphohn is using 21 movable tanks-fifteen 1,000-gal. tanks and six 500-gal. tanks. It is estimated that the saving on clean-up work alone amounts to approximately \$1,650 a year.

The company's fluid formulas are packaged in 10 different sizes of bottles ranging from 6 cc. (approximately one teaspoonful) to 5 gal. Fluid packaging operations are performed on 10 different lines. The packaging operation is further complicated by the fact that color of the products varies from liquid white to black and the viscosity varies from that of water to that of cold molasses.

Until Upjohn developed its portable-tank arrangement for transporting the fluid product from the manufacturing center to the packaging lines, the accepted method was to use rubber hoses or metal pipe lines. To avoid color or chemical contamination with hoses, it was necessary to use a separate hose for each product. Many products required special hoses because of the solvents incorporated in the formulas. Metal pipe lines have been used successfully, despite their disadvantages of high initial cost, difficulty of cleaning between formulas, high retention volume and occasional reaction between the metal and the fluid product with consequent discoloration or off taste in the product.

The subsequent installation of sanitary dairy-type piping and fittings was an improvement because the lines could be dismantled and cleaned with brushes, as was found necessary. However, the labor involved in dismantling, cleaning and re-assembling the many lines made even that set-up something less than ideal.

Before The Upjohn Co. moved to its new one-story manufacturing plant, the production and packaging operations were carried out in multi-story buildings. Manufacturing was done on a floor above the packaging operations and the fluid product flowed by gravity to the filling machines through rubber or synthetic hoses. The relative distance between the manufacturing tanks and the filler was shortnot exceeding 30 ft. The hoses were considered expendable and were replaced often.

In the new plant, both manufacturing and packaging operations take place on the same floor. The maxi-

Chemical Engineering Dept., The Upjohn Co., Kalamazoo, Mich.

PORTABLE TANK, mounted on I-beam frame and casters and moved by hand-guided fork truck, transports 1,000-gal. load of fluid product for delivery to packaging line. Filter press (background), also on wheels, serves any of the eight stationary tanks for mixing elixirs, syrups, etc.



mum distance between the manufacturing tanks and the packaging lines is approximately 200 ft. The use of hoses for transporting the fluid was out of the question, not only because of distance, but also because the areas are separated by a heavily traveled aisle. Fixed metal lines and sanitary take-down-type piping were considered and investigated before the portable-tank idea was developed and adopted.

Most of the fluid products at Upjohn are prepared in 500- or 1,000gal. glass-lined tanks. These manufacturing tanks are in fixed positions and are connected with the necessary services such as electricity, steam, air, water, etc. The ingredients and solutions for each formula are processed in these tanks and subsequently pumped through plate-and-frame filter presses into the 500- and 1,000gal. portable glass-lined tanks that are equipped with an agitator to make sure the entire batch will remain homogeneous during the packaging operations.

It was no trick to mount these tanks on casters, but considerable development work was necessary to find the right prime mover and coupling arrangement to move these tanks safely when filled with liquid that had a tendency to splash and jostle around

Upjohn engineers solved the problem by mounting each glass-lined tank on a 6-in. by 3%-in. by 12.5 lb./ft. I-beam that was formed in a circle and then butt welded to form a ring. The diameters are 4 ft. for the 500-gal. tanks and 5 ft. 6 in. for the 1,000-gal. tanks.

The equipment finally selected for the job of moving the tanks consists of a battery-operated, hand-guided fork truck equipped with a special bumper and engaging blocks to permit automatic coupling with the I-beam ring support underneath the tanks when the fork bed is elevated by means of the hydraulic mechanism on the truck.

The 500-gal. tanks are equipped with four swivel casters with 8-in. diameter by 3-in.-face plastic wheels. The 1,000-gal. tanks are mounted on six swivel casters with 10-in. diameter by 3-in.-face plastic wheels. The spacing between casters was designed to permit the use of the same fork-lift truck for both the 500- and 1,000-gal. tanks.

The location of the bumper and



DIRECT TRANSFER. A 1,000-gal. tank load of semi-heavy fluid, such as Cheracol cough medicine, is fed directly to rotary vacuum-type filler. Tank is equipped with agitator to keep product homogeneous.



FLOAT-CONTROL device (directly beneath small vertical glass tank, foreground) is used to regulate the flow of heavy liquids from the tank to filling machine.

engaging blocks on the forks of the truck is critical in order to permit automatic engaging with the I-beam ring support when the forks are elevated. The forks are lifted just high enough to engage the I-beam and do not take any of the weight of the tank. This is done to assure uniform loading on all casters and to permit easier steering of the combined units when in motion. Without this firm linkage between tank and truck, the tank would wobble when in motion and control would be impossible. It is imperative to have the tank "track" straight when spotting for filling or for connecting to the filling machines on the packaging lines.

A short, white synthetic-type hose (This article continued on page 203)



PROPER COUPLING of truck to the movable tank is a critical factor in the success of portable fluids handling. Here, operator points to lugs which engage I-beam frame. Casters, not the truck, support weight of the tank while in transit.



AVINGS of \$1,560 a year oult from elimination of takedown, cleaning and re-assembling of fixed pipe installation. Here, glass-lined tank is being easily cleaned by hosing and scrubbing.



FINISHED PACKAGES approach the ideal for this type of product, with maximum visibility of contents yet plenty of color and good brand identity in saddle labels, which are legibly imprinted with product name, weight and price.



SLOT MACHINE pops up another imprinted, prefolded label each time that one is withdrawn. Labels are fed from a roll, printed, cut off and folded automatically. Type changes are easily and quickly accommodated.



AMERICAN STORES HAS NEW MACHINE THAT DELIVERS

A PRINTED AND IMPRINTED LABEL READY TO APPLY TO THE BAG TOP

First use of a new automatic machine that delivers fully imprinted bag-top labels, folded and ready to apply, is the latest innovation to be credited to American Stores Co., Philadelphia—one of the real pacemakers in the techniques of produce pre-packaging.

The potentialities of the machine will be apparent to every prepackager who is faced with the problem of presenting his fruits and vegetables with a maximum of visibility, yet colorfully labeled, accurately identified and legibly priced—and at minimum packaging cost, as in the mechanized line operation that American Stores conducts at its central pre-packaging plant in Kearny,

The plain transparent bag with a saddle label has been favored by many pre-packagers as a means of meeting these objectives. Not only is the prefabricated bag easy and economical to handle, but by confining printing to the bag top as a closure, the packager leaves the bag itself 100% transparent for inspection of the contentsa point which extensive tests have shown is important to the acceptance of such items as green beans, wax beans, spinach and peas. The upright bag-top label serves further as a display header and a means of handling and carrying with minimum damage to package and contents.

But, up to now, an operation such as that at Kearny has been bottlenecked by the necessity of hand stamping the product name and price on each label prior to attaching it to the filled bag-a relatively clumsy and time-consuming operation.

The new machine is, essentially, a miniature rotary press. It is fed by a continuous web of three-color preprinted labels to which it adds the specific information such as product name, weight, price and code date. It cuts off the label and delivers it prefolded ready for the operator to grasp and apply to the bag with no waste motion.

The machine—no bigger than a teletype machine—was developed by a leading supplier of price tags and labels. Its advantages were quickly recognized by Paul Cupp, zone manager at Kearny, N. J., one of the earlier proponents of produce prepackaging.

At Kearny, the label imprinter has been installed near the end of the

^{*}See "Pre-Packaging Conclusions," Modern Packaging, July, 1948, p. 104.

packaging line where green beans, wax beans and peas are customarily bagged and sealed. The machine is designed to team up with other automatic equipment on the line.

The basic design of the precisionbuilt machine has been kept simple for easy maintenance. Type changes can be made quickly; ink refill is a fast and clean operation.

The ink used and the design of the ink reservoir constitute one of the special features. The ink is a non-drying type which depends upon the absorbency of the label for quick penetration. Because of this formula, the inking pad—a porous rubber sleeve over a perforated metal cylinder that serves as the reservoir—remains moist and ready for use at all times. Even on a Monday morning, when the equipment has not been running for more than 48 hrs., the American Stores operator finds that the first label has a sharp imprint.

There is also an exceptionally slow rate of ink consumption. When this article was written, the equipment had been running at American Stores an average of 30 hrs. per week for more than four weeks without a single refill—and an inspection showed that the reservoir was still 90% full.

Ink for refill is supplied in a collapsible tube with a nozzle tip which fits into a small aperture in the end of the reservoir cylinder; a few squeezes and the filling is completed.

For rapid change of imprint, the type chase in the rotary printing head is built as a removable unit. It holds both movable figure type—bandmounted like the rubber type on an office date stamp—and removable rub-

ROLL FEED at base of machine will supply up to 8,000 labels, good for any bagged product of the plant with proper change of imprint type. Slow, tedious stamping of single labels by hand is thus eliminated.



ber type slugs for letter copy such as product name, ingredients, etc. Each slug of letter type is securely held in the chase by metal clips.

The preprinted labels are fed into the imprinter from a reel located on the underside of the machine. In the case of American Stores, each roll contains 8,000 labels, so that it is necessary to reload the printer only two or three times a day.

American Stores' labels, under the "Fresh Pack, Ideal Brand" name, are printed so that identical copy—both the red, yellow and green preprint and the black imprint—appears on both sides of the saddle label. As supplied to the machine, the web is prescored at the folding point of each label and it also has a die-cut round perforation, about 3/16 in. in diameter, centered on the cut-off line between labels.

The perforation is the means of transport of the web through the machine. The printer mechanism has a roller with four small pins which engage the holes in the web to pull it through and at the same time assure accurate registration.

The cutting knife which shears the imprinted label from the web is located just behind the creasing blade at the front of the machine.

Cut-off is made directly through the center of the small round perforation and the half-circle cut-out that remains is hardly perceptible at the bottom of the label after it is apr lied to the package. The finished, folded label is discharged through a slot at the front of the machine, as shown in the illustrations.

The machine is automatic to the extent that each time a label is pulled out it starts another cycle and another label pops up ready to be picked off. Thus the machine adjusts itself to the speed of the operator. At American Stores, the speed of newly trained operators has been between 20 and 25 labels a minute, but the capacity of the machine is 45 labels a minute and with increased dexterity operators are expected to reach approximately that speed.

American Stores is using a label which, as applied to the bag doubled over, is 5 in. wide and 1% in. deep. The machine will handle labels up to 6 in. wide. The manufacturers of the machine state that labels may also be supplied fan-folded rather than in a roll. American Stores applies its la-(This article continued on page 195)



CONVEYOR-LINE operation in American Stores' Kearny, N. J., plant sends filled bags past label machine (right) then through heat sealer. Ultimate speed of operation is 50 bags a minute.





MECHANISM of imprinter is shown from rear with cover removed. Note ink roller, removable type chase and pin on transport roller engaging perforation in label web, which controls register and action. Dial on side of unit regulates ink impression.

REMOVABLE CHASE holds interchangeable rubber type slugs for product copy, plus figure type mounted on rotating bands that can be easily and quickly set to any price or weight figure.



better wrap

for cheese



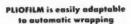


PLIOFILM's making history because it's making more cheese sales, faster, than any packaging method yet developed. It's been used with outstanding success in wrapping natural cheese, links, vacuum packs and wedges.

PLIOFILM seals in natural moisture, clings better, doesn't wrinkle or pucker. And its window-clear transparency means appetizing display. For information write:

Goodyear, Pliofilm Dept.,
Akron 16, Ohio.





You can save considerably by using an automatic wrapping machine to apply PLIOFILM. We'll be glad to turnish names of equipment manufacturers who supply, make or convert PLIOFILM packaging machinery.



GOOD YEAR
PACKAGING
FILM

Good things are better in

Pliofilm
3-way protection against air, maisture, liauids

We think you'll like "THE GREATEST STORY EVER TOLD" - Every Sunday - ABC Network



-cut costs by stretch-wrapping

PACKAGING frankfurters, sandwich meats or other irregularshaped meat items? You'll find it pays to stretch-wrap them in PLIOFILM. This unique method offers you these practical advantages:

1 Skin Tightness — Stretch-wrapping conforms to irregular shapes, makes a neater, more attractive package. Skin-tight fit retards slime and mold growths.

2 Versatility-products of differ-

ent dimensions can be stretchwrapped in the same machine using the same operation and speed.

3 Low Cost - High Strength - In stretch-wrapping, PLIOFILM is heated, permitting it to be stretched around the product - greatly increasing the strength and yield of PLIOFILM.

For further information on this moneysaving packaging method, write: Goodyear, Pliofilm Dept., Akron 16, Ohio.



Good things are better in

PACKAGE STATES IN GOOD STATES IN THE PACKAGE STATES IN THE PACKAGE

Frank

Pliofilm, a rubber hydrachioride— T. M. The Goodyear Tire & Rubber Company, Akren, Ohio

EHLERS



IMMEDIATE RECOGNITION is assured for Ehlers Ly basic red and blue color treatment meeting in a scallop pattern and the bold reverse lettering. The basic design has been adapted to all packaging with the exception of a variation for the "Smack" package. The old packages (inset, upper left) had no uniformity either of color or of design treatment except for the lettering of the trade name. As a result, they had no force in display and no continuity for consumer remembrance.

Another strong case for unified family design in the grocery field is pointed up by the new red, white and blue packages for Ehlers food products which are currently being displayed widely throughout the New York area, New England and Pennsylvania.

OLD

The new prominence this redesign program has given to Ehlers products, both individually and as a group, is something which might well be emulated by many long-established companies with wide regional followings that are hiding their light under a bushel by a heterogeneous collection of packages.

Ehlers reports significant increases in sales, which it attributes to the increased recognition achieved through the new family design. Dealer acceptance is greater due to the improved display possibilities and salesmen's jobs have been made easier with this new line of unified packages to sell.

Since 1893 the Ehlers name has been known to grocery shoppers in Eastern markets, first for fine coffees, then for other food products as they were gradually introduced. The company, Albert Ehlers, Inc., has been in the same family for three generations.

As the company grew, however, and new products were introduced, packages were adopted for each product with little regard for family resemblance. In consequence, the

packages were almost completely lacking in the uniformity of design and color treatment which is considered so essential today for quick brand recognition and mass display in the modern food store.

About two years ago the company commissioned an independent designer to restyle all of the company's packages to bring them into one big family—the first over-all revamping of design in 20 years. This program, now complete, covers coffee, whole spices, ground spices, dried vegetables, canned vegetables, dehydrated flakes for seasoning, instant coffee and a monosodium glutamate product called "Smack."

The basic motif is comprised of two

RE-TAILORED

NEW FAMILY DESIGN FOR LONG-ESTABLISHED BRAND PROVES

ONCE AGAIN THAT IN UNITY THERE IS STRENGTH

standard background colors—a marine blue and red—with the company name in reverse white in the blue area and product names in reverse on the red area. The two colors meet in a scallop, which gives a feeling of movement. The design is extremely simple, almost conventional—yet its large color areas are bold, definite and unmistakable, either close up or at a distance.

The basic elements are applicable to a diverse group of containers and are equally effective on wrap-around labels for cans, lithographed metal containers—round or square, tall or short, big or little—for folding cartons, window cartons and bags, which the company uses for some coffee packing. The design is adaptable for use with full-color illustrations of contents, such as are used on the canned vegetable labels, or with transparent film windows so that dry vegetables and whole spices may show through.

It permits ample space for price patches on carton end flaps.

The design has also been adapted to shipping containers, truck and out-door signs, company letterheads and all promotional material. The new packages provide an immediately identifiable symbol in all types of advertising.

Aside from the design, there are other interesting aspects of the pro-

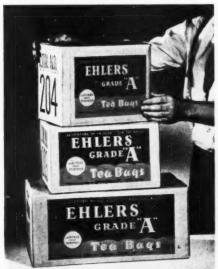
For its instant coffee, just recently introduced, the company chose instead of the standard glass container a reclosable can. It was felt that this would distinguish Ehlers Instant Coffee on the shelves, since only one of the major brands, G. Washington, is currently using the reclosable metal container.

The window cartons are designed and printed complete with illustration of contents in the window area, which is die cut after printing. This is done so that new plates will not have to be made in case of transparent film scarcity, which might necessitate elimination of the window.

All recipe copy on the packages was revised in accordance with tests made by an independent test kitchen

On some of the packages, line drawings of the three generations of Ehlers—grandfather, son and grandson—are presented with appropriate copy, such as "Ehlers—Blenders of Fine Coffee for Three Generations" and "It takes experience to blend fine tea—Ehlers Tea has been blended by the same family for three generations."

CREDITS: Design, Lane Marohn, New York. Cans and metal containers, American Can, New York. Can labels, Rossotti Lithographing Co., North Bergen, N. J. Cartons and corrugated shipping containers, Robert Gair Co., Inc., New York

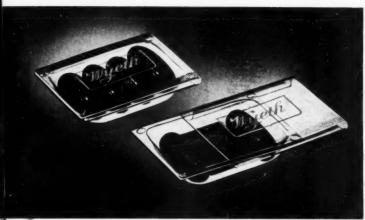


SHIPPING CONTAINERS are given the same design treatment as the individual packages, making the Ehlers name quickly identifiable in warehouse and stockroom.

> QUALITY APPEAL of the brand name is promoted by these illustrations of three generations of Ehlers printed on the carton for tea and cans for coffee.



Drugs in plastics



DRAWN ACETATE tray with sliding cover makes efficient, economical sampler unit. Same container is used for four capsules, or for two by use of foil-laminated paperboard divider. Trademark is printed in white.



Pharmaceutical concerns spend millions of dollars annually to send samples of new products to physicians. They have discovered that doctors respond more favorably to products which are sampled in distinctive packages suggesting high quality of product.

Currently the small plastic transparent box appears to be gaining favor. New and faster methods of manufacture have made the plastic container more economical. It provides a convenient, small unit for mailing and for the physician and patient to carry in the pocket. It is sturdy and not easily broken. Its transparency provides visibility of product, many times enhanced by the attractive colors of the capsules or tablets it contains.

Three firms—Wyeth, Inc., Philadelphia; Charles Pfizer & Co., Inc., Brooklyn, and Schering Corp., Bloomfield, N.J.—have just introduced examples of such containers.

Wyeth, Inc., which designs and remodels more than 40 sample packages a year, has distributed more than 500,000 samples of its Minules, vitamin-mineral capsules, and Sevetol, a high-potency multivitamin capsule, in a tiny acetate tray with sliding cover, neatly housed in a sturdy, carefully identified mailer.

The unit represents a collaboration of the efforts of A. Douglass Brewer, Wyeth's director of advertising; Norman Oldroyd, chief of Wyeth production, and the company's contract packager to devise a package that would increase efficiency in handling and distribution, and which would require little effort on the part of the doctor in administering the product.

The same package unit is used for both products. It consists of a tiny

COMPLETE MAILER of paperboard holds transparent box securely in place by means of a heavy cardboard filler, specially die cut, to prevent crushing.

ETHICAL FIRMS ARE QUICKLY DISCOVERING

THE EFFICIENCY OF MINIATURE ACETATE AND

POLYSTYRENE CONTAINERS FOR SAMPLING

drawn acetate tray with sliding cover, measuring 1% by 1% in. over all, placed in a specially die-cut carton measuring 3% by 2% by % in. deep which protects the semiflexible sheet container, gives bulk to the package for handling and provides ample space for printing informative and mandatory data. A heavy, rigid paperboard filler cut with a slot just big enough for the plastic box to slide in eliminates the danger of crushing, a common fault with many physicians' samples.

The acetate container holds four capsules of the Minules, but only two of the Sevetol capsules. To use the same container, however, for the smaller quantity, the company has designed an attractive unit by separating the two capsules with a paperboard filler covered with gold-colored foil, which keeps the capsules in place within the transparent box and enhances visibility of the foil through the sliding acetate cover. The Wyeth trademark is printed in white on the cover, thereby assuring recognition.

The sliding cover is simply a flat sheet of acetate with the two side edges crimped over to engage with the flat base of the drawn rim. Although actual cost figures not available, it is apparent that container drawn from sheet material is considerably less expensive, for small quantities, than similar molded boxes on which mold cost must be considered.

Acetate was selected as the satisfactory plastic material after it was determined that it gives off no odor which might be absorbed by the drug and that there could be no chemical reaction between the packaging material and the drug.

The package unit is intriguing and convenient to use in that the tiny acetate box may be easily slipped out of its cardboard container and opened for use with the flick of the finger. Comments from salesmen and physicians have been so favorable that the company expects to use a similar sample package for other products.

Charles Pfizer & Co., Inc., has solved a similar problem in the sample packaging of its antibiotic Terramycin capsules by the use of a molded transparent polystyrene box.

The problem was to design a convenient, sturdy, protective pocket case in which the doctor could carry MOLDED POLYSTERAE 5
used for six-well box designed
for Pfizer Terramycin. The company name and trademark are
molded in and overprinted in
blue. Sliding cover may be re-

moved with the flick of a finger.

a few Terramycin capsules for bedside dispensing. The small polystyrene box with sliding cover is molded with six individual cells to hold six 250-mg. capsules. A flange on one end of the cover permits it to slide off in only one direction. The product name and Pfizer trademark are molded in relief on the cover and then overprinted with dark blue, making a very attractive, quality unit. Pfizer has also gone a step further by stamping FDA information on the base of the box.

Schering Corp. has chosen a sampler container of polyethylene, injection molded entirely in one piece—complete with catch, self hinge and compartments for six tablets.* The smooth, pliable polyethylene gives the appearance and "feel" of maroon leather grain. The box measures 1% by 1% in. and in it the pills are said not to rattle or powder.

CREDITS: Wyeth formed acetate container, Plastic Artisans, Inc., White Plains, N. Y., using Monsanto Vuepak and Eastman Kodapak. Paperboard mailer, Sparks Corp., Philadelphia. Pfizer molded container, E. B. Kingman Co., Leominster, Mass., using Monsanto and Dow polystyrene. Schering container molded by Auburn Button Works, Inc., Auburn, N. Y., using DuPont Alathon polyethylene.

POLYETHYLENE BOX is injection molded in one piece, complete with catch, self hinge and compartments for six Schering Sulamyd tablets.



• See "Polyethylene Soft Box," Modern Packaging, March, 1941, p. 97.





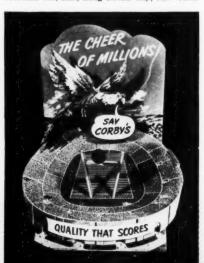
Drug stores are being supplied with these two companion counter displays for promoting three of Park, Davis & Co.'s vitamin products—Abdol with Vitamin C. Kapseals Combex and Kapseals Combex with Vitamin C. Both merchandisers are lithographed in eight colors. One unit features a family group, indicating the product's use by the entire family. "Summer pep," the theme of the other unit, and a reproduction of a healthy-looking girl, convey the thought of the health-giving effect of the product. Both have price-marking patches. Display, Forbes Lithograph Mfg. Co., Boston.

Johnson & Johnson has introduced its new Band-Aid Plastic Strips—ready to use protective dressings for small cuts—in this eye-catching counter display carton that effectively shows in vertical position 1 doz. metal containers holding the product. Full-page color ads featuring the item will appear in Life, Look, The Saturday Evening Post, Colliers and Sunday supplements, as well as on two TV shows. Display carton, Empire Box Co., Garfield, N. J.

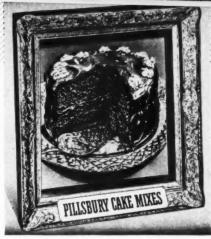
DISPLAY

A timely impact is achieved by this "Stadium" window display showing the Corby's parrot hovering in mid-air over the field and the football soaring over the goal. The miniature football, full dimensional and mathematically exact in its proportions, hooks to the cross-bar by a hidden wire. Goal posts are also in relief. The unit is 30 in. wide, 44 in. high and is lithographed in eight colors. Display, Einson-Freeman Co., Inc., Long Island City, New York.

The focal point of Northam Warren Corp.'s display for the new Cutex Stay Fast Lipstick is a circular glamour photograph implementing promotion of the product as a lipstick that "Never leaves a kiss print." One dozen lipsticks are displayed in their own niches on the face of the counter card and 14 are held in a convenient back storage compartment which allows easy replacement. The lipstick comes in seven shades, the names of each appearing under those displayed.







The stimulation of impulse sales of Pillsbury Cake Mixes is the aim of this counter display reproducing a mouth-watering chocolate cake. The display incorporates a shadow box with a simulated carved gold frame with the cake projecting into forward place. Lithographed in full color, it is calculated to have strong appetite appeal for shoppers in grocery stores and self-service markets. Display, Consolidated Lithographing Corp., Brooklyn, N. Y.



Jules Montenier's new counter display for Stopette deodorant features an ingenious locking device that holds the squeeze bottle in the paperboard display. The polyethylene container snaps into a tight-fitting cut-out that automatically locks it in place, yet allows removal for inspection by prospective customers. Display, United Board & Carton Corp., Syracuse, New York.

GALLERY

A striking floor unit is this life-sized motion display for National Distillers Products Corp.'s Sunny Brook brand. The giant miner, standing on a base of rock washing gleaming gold in a pan, is over 6 ft. tall. Swinging in the huge hands are two bottles—Sunny Brook Yellow Label and Sunny Brook White Label. The paperboard unit, which operates on a single flashlight battery, is lithographed in full color. Display, Einson-Freeman Co., Inc., Long Island City, N. Y.

Roberk Co.'s new interior automobile swivel spotlight is being merchandised in a one-piece, die-cut and scored display shipper of unusual construction. The unit consists of a cutaway pocket for the spotlight and a side display panel. The pocket is slotted at one side to hold the product securely in an upright position and to accommodate insulated wire and spade terminals, for attaching the light to an automobile's ignition system. Design, George Reiner, New York, Box, S. Curtis & Son, Inc. Sandy Hook, Conn.









FAMOUS IDENTITY of red and white labels is retained, but improved for better recognizability by cleaner script, more prominence to the kinds of soups. Brand and variety names replacing listings of soups on back of the label provide quick identity no matter how can is turned.

Stronger Campbell's

REDESIGN OF THE FAMOUS LABEL ACHIEVES BOLDER IDENTIFICATION

SO DISCREETLY THE CHANGE MAY GO UNNOTICED BY CONSUMERS

The vital importance of subtle re-finements in design detail to meet today's self-service merchandising requirements is again strongly emphasized by the Campbell Soup Co.'s complete restyling of its famous redand-white labels.

The new labels are appearing regionally on food-store shelves as rapidly as stocks of former labels are exhausted on all the company's brands of ready-to-serve soups, pork and beans and tomato juice. Tomato ketchup, recently introduced under the Campbell brand, is also appearing with labels in accordance with the revised design.

A casual glance at the new labels would scarcely give the impression that any change had taken place, so skillfully has the Campbell identity been preserved-yet a careful examination reveals a number of improvements aimed at making selection of the various soups and other products easier for self-service store shoppers.

First to be given the revised treatment was Campbell's tomato soup, followed by similar restyling of all 22 varieties. The new labels, of course, retain the half-red, half-white color scheme which the company has guarded so zealously, but the script for the firm name, Campbell's, has been given a clearer, bolder treatment, while the company seal has been made smaller. The words "condensed" and "tomato" now appear in

PICTORIAL TREATMENT of a glass of tomato

juice surrounded by tomatoes also gives quicker

identification to contents. New design is more

larger, bolder lettering for quicker recognizability and are thus subordinated to the word "soup."

The back of the label has also been revised to carry the name of the soup and the brand in bold letters instead of the former listing of other Campbell soups, thus making brand and variety identifiable no matter which way the cans are turned on the grocer's shelves. The pork-andbeans label has also been given the new basic design treatment with the stronger brand name script and greater emphasis on the word "beans." A striking innovation on this label is the use for the first time by Campbell's of a full-color vignette illustration of the product rimmed with a gold border. Formerly the message, "pork and beans with tomato sauce," had the center of attention.

Stronger brand and product identification has been given to the tomato juice can label plus a drawing of a glass of tomato juice surrounded by tomatoes, which is more suggestive of the product than the profile picture of a glass of juice alone which was formerly used.

CREDITS: Design, Lippincott & Margulies, Inc., New York. Labels, Multi-Colortype Co., Cincinnati, Ohio.

FULL-COLOR vignette of product is used for first time by Campbell's on pork and beans label.







MODERN PACKAGING

13th Annual Forum of the PACKAGING INSTITUTE

Motel Commodore October 22-24, 1951

M ounting concern over the problems of packaging in today's mixed-up economy was reflected in an impressive new record for attendance at the Packaging Institute's 13th Annual Forum, held Oct. 22-24 at the Hotel Commodore in New York. A preliminary check showed a total of 1,056 registrations. Although this may include a few duplications, which will be eliminated in the final audit, it is apparent that the Forum has topped the 1,000 figure for the first time.

This figure compares with a final total of 796 last year. Rapid growth of this annual event over the last four years can be traced by looking back to 1947, when there were less than 450 registrants; with a rise to 508 in 1948, and to 677 in 1949.

Starting off with "Washington Day" on Monday, when factfilled reports on military packaging and Government controls were presented and discussed from both Government and industry viewpoints, the program progressed through a crowded technical program on Tuesday, when 25 technical papers were read in as many as four concurrent sessions, to a final day with emphasis on problems of the production line.

The key role which Bob Couch has played in the recent build-up of the Institute was recognized with his elevation from a vice presidency to the presidency. On leave from General Foods Corp., where he had been in charge of package development and Government controls coordination, Mr. Couch is now Director of the Containers and Packaging Division of the NPA in Washington.

Newly elected as vice presidents were F. S. Leinbach of Riegel Paper Corp., who has been general chairman of the Technical Operations Committee, and R. Chester Reed of The Texas Co., chairman of the Petroleum Committee.

Charles O. Kendali of E. R. Squibb & Sons, retiring as president of the Institute, becomes ar. ex officio member of the board of directors and he therefore resigned his regular post as a board member to make room for the appointment of Herbert T. Holbrook of Standard Cap & Seal Corp., who was program chairman for this year's Forum. Also newly elected to the board of directors were Edward F. Dival of the Corn Products Refining Co., and G. Norwood Fisher of the Kraft Foods Co. Reelected to the board were Mr. Couch, Mr. Leinbach, H. A. Miller of the Burt Machine Co. and H. Lyle Greene of Peters Machinery Co.

Speaker at the luncheon on Monday was Rep. Porter Hardy, Jr., Democrat from Virginia, who as chairman of the Subcommittee on Government Operations of the House Expenditures Committee has recently brought the spotlight to bear on military packaging costs. Rep. Hardy made it clear that he appreciates the essentiality of proper packaging, but seeks to eliminate needless expense in procurement practices, as in the indirect procurement of some \$1 billion worth of automotive parts, 10 to 15% of the cost of which, he said, goes for packaging. He sees no reason, he said, why the basic manufacturer of the part should not do the packaging and shipping, to avoid costly rehandling. He was critical of still-existing differences in specifications of the three Armed Services and said he wanted to find out whether proper analysis was being made of bids for packaging work.

Luncheon on Wednesday was in the nature of a report to members from the Institute leadership. Dr. Laurence V. Burton, executive director, presided and introduced Mr. Kendall, the retiring president, who spoke briefly of the opportunity which the Institute offers for common solution of common problems. It offers a chance, he said, to measure your own packaging effort against that of others, both in the meetings and in committee work, and he cited specific lessons valuable to his own company which he had picked up at the current Forum.

Mr. Leinbach traced the growth of the Institute from its beginning in a small hotel room through its wartime gains and to the important decision to concentrate on the functional aspects of packaging. There is apparent now, he said, the beginning of a growth into the field of production technique, which offers still further possibilities. Both Mr. Leinbach and Mr. Kendall stressed that members should approach the Institute with a literally selfish attitude, asking always: "What am I getting out of it?" It will be found, they indicated, that what any member gets out is about equal to what he puts in.

Following is a summary of proceedings at the 13th Annual Forum:

PROBLEMS OF MILITARY PACKAGING

Chairman, Heinz H. Loeffler, Packaging Industry Advisory Committee, Munitions Board, Washington.

Mr. Loeffler organized the discussion around four pertinent questions concerning the military packaging organization, with one member of his panel speaking for the industry side and one for the military side on each question.

Is the military packaging organization adequate for the job ahead? Taking the industry side of this question, Mr. LOEFFLER said there were big problems in re-awagening the military higher-ups following the postwar letdown: they had to be sold on the importance of packaging. Packaging's place has been proved, however, since it shows up in the profit-and-loss statement from the battlefield just as surely as it does in business. He traced the organization of the packaging committee in the Munitions Board and said that he had originally asked that one central packaging office be established in each service and one in each Government department, with specifications to be approved and disagreements resolved by one over-all central agency-a sort of supreme court of packaging. When the Munitions Board system evolved, he fought for control over packaging by technically qualified people; in the current re-organization at top levels that objective, he intimated, is being achieved.

Col. John A. Way, of the military packaging controls section of the Munitions Board, speaking for the military, also commented on the current re-organization and pointed out that it places most of the responsibility under a single authority in the Munitions Board. He spoke of the effort to standardize packaging specifications for all three services, which he said is a means of economy not only for the Government, but also for packaging plants. He cited examples of coordination of efforts of the three services.

Are packaging specifications providing adequate protection for military supplies? The answer to this question from the industry viewpoint is generally "yes," said W. B. Tibbets of The Dobeckum Co. There has been very little spoilage of materiel packaged according to specifications prevailing in the last five or six years. However, there are borderline cases which should be rigidly policed; cases where the packaging material just barely meets the requirements of the specification. Mr. Tibbets was critical of frequent revisions of flexible packaging specifications and the long delays entailed.

Stressing that his information on performance could be only hearsay, since a supplier seldom had the opportunity of seeing a package broken open in the actual theater of operation, Mr. Tibbets deferred to Maj. ROBERT A. STARR, Chief of the Packaging Section, Standards Branch, G-4, U. S. Army General Staff, who had just returned from a trip to Korea as a member of a packaging inspection team. Maj. Starr said it was the unanimous opinion of members of the General Staff team that items packaged and marked according to specifications were arriving at the Korean front in usable condition. Domestic containers, he said, might get the stuff as far as Japan, but would fail in Korea, where the difficulties with native labor, who were unable to grasp the meaning of a simple sign, like an arrow pointing "this side up," were ap-palling. Conditions of transport from the Korean port to the battle line also are unbelievingly punishing, even where railroads are used.

Is effective action being taken to conserve critical raw materials and to provide lowest-cost packaging without sacrifice of adequate protection? Without attempting a definitive answer to this question, RALPH A. O'REILLY, Service Manager, General Motors Corp., speaking for industry, cited five points where effective action can be taken: (1) In the planning and specification stage, it is always most vital that economy be provided for and a guide to scarcities be followed. (2) Comparing present specifications with those of World War II, he has found that the quantity of packaging material required is going to be substantially greater-two to three times as much for a given item. The question is: can the packaging industries supply it? (3) More reports like Maj. Starr's from first-hand observation overseas are needed to spot and correct failures. (4) While analyzing failures, services technicians also should have a sharp eye out for over-packaging, as an economy measure. (5) Standardization of specifications and elimination of duplication of effort will be good news to industry in line with conservation and economy. On the latter, Mr. O'Reilly said industry would like to see agreement on (a) corrosion prevention methods; (b) unit-package quantities; (c) use of alternate materials under the specifications, since specificity is frequently nneconomical and (d) re-establishment of the military packaging-team system which is designed for visiting and helping supplying plants.

Lt. Cot. John K. Mount, Chief of the Packaging Section, Office of the Deputy Chief of Staff for Material, U. S. Air Force, cited several examples of economizing steps by the Air Force, but stressed that there are some items, such as aircraft engines, so vital io military operations that no compromise can be made. There is, in fact, a trend to greater use of metal containers by the Air Force, taking a large amount of this vital material; however, these containers are frequently re-usable, whereas previous types were not. The Air Force has a program to reactivate and re-use dessicants; it is taking steps to economize on wood and on steel strapping. Recently it was found that officers' caps were being packaged one to a carton; by a simple means of turning the caps so that two would fit in the same space, the carton requirements for the packaging of that item

were cut in half.

Is industry being given—or can it be given—the facts it needs to meet the demands ahead for packaging materials? The answer to this, said the industry representative, ROBERT L. LEE of Shellmar Products Corp., is "no." He cited the experience of the flexible-packaging industry in trying to determine the requirements for barrier materials. Right after

Korea, he said, we heard figures ranging all the way from 3 million to 250 yards for the first year. It is still not clear what the flexible-packaging industry will be called upon to produce. Barriers use highly critical materials—but NPA, which allots these materials, has been unable to get any estimates from the military. He criticized loose practices in requesting allocations of such materials as foil; let's have, he suggested, at least a "guesstimate." He urged reverting to the World War II practice of "umbrella" or standing orders for certain packaging materials such as barriers, which would permit the manufacturer to run along at a minimum economical rate and stockpile the materials.

"Guilty as charged," said CLINTON K. ROYCE, packaging chief of the Office of Naval Materiel, in reply. But he detailed the circumstances which have precluded any quick and definite answer on requirements for such things as barrier materials. The Joint Chiefs of Staff must determine the "mission," around which all military planning revolves. The Requirements Division of the Munitions Board then determines requirements, quite apart from the Supply Management Division, which must figure out the detailed requirements for industry—and so far the Requirements Division has dealt only with requirements in terms of basic materials, like steel and aluminum and copper. It takes a long time to break down the set-asides of basic materials into items as specific as packaging barrier materials.

PROBLEMS OF GOVERNMENT CONTROLS

Chairman, ROBERT DES. COUCH, Director, Containers and Packaging Division, National Production Authority.

Mr. Couch discussed the organizational set-up of Government agencies responsible for carrying on the defense program. Of these, the agency most important to packagers is the Containers and Packaging Division of NPA. To make sure military needs are met and to assure equitable distribution of remaining supplies for civilian needs, steel, copper and aluminum are allocated under provisions of the Controlled Materials Plan (CMP).

Certain other materials, such as chemicals, rubber, etc., are regulated by various M orders. Seven M orders have been issued by the Containers and Packaging Division. They relate to cans, closures, collapsible tubes, steel drums, metal strapping, glass containers and aluminum foil packaging.

If you are a package user and come under those orders, you can appeal any particular hardship to the branch chief; then re-appeal, if not satisfied, to the review committee within the Containers and Packaging Division. A final appeal can be

made to NPA.

Most of the metals used in packaging are in tight supply with little prospect for relief in 1952, especially during the first quarter. Later in 1952, the lead supply may improve as a result of imports. If possible, substitutes should be planned for copper and brass. Tin is expected to remain in short supply. Aluminum may improve later in 1952.

Mr. Couch then called on his panel members for reports on specific materials as follows:

Aluminum Foil—J. WILSON McCLENACHAN, Reynolds Metals Co. The M-67 Order, referred to as the aluminum foil, converted order, places restrictions on the amount of aluminum foil by weight to be converted, but does not apply to foil converted or to be converted for insulation or packaging closures. The order provides for a degree of flexibility by permitting the use of material for production of an item in one class to be used in the production of an item in a different class, but not in excess of permitted use thereof.

The M-26 Order refers to packaging closures and establishes quantity limitations by classes of product for packaging closures made of aluminum. The closure restriction is established at

the end-user or packer level, being based on his use by numerical quantities during an established base period.

During World War II, the military accounted for about 90% of the total consumption of aluminum. Foil production was prohibited. Military requirements for the metal this year are expected to take only 25% of the supply. Prohibition of aluminum for certain uses has been discussed by NPA, but no such action is contemplated for the immediate future.

Primary aluminum output has increased so sharply that 1951 production will be double that of 1946. Further expansion will enable producers to achieve a rate of more than 2,200,000,000 lbs. annually in 1952, a 50% production increase over 1950. It is predicted this expansion may meet military demands and allow enough for civilian use equivalent to 1950.

Polyethylene-HENRY GRIFFITH, Plax Corp. Since controls were first applied to polyethylene, Mr. Griffith stated, the situation has developed considerable stability. It is true that only the military is completely satisfied, but those items classified as essential civilian are being granted sufficient material to meet minimum requirements and the remainder is channeled as best as possible to keep alive the companies that were in business prior to Korea.

In the last few months new productive capacity has been brought in, but it takes time for this output to reach the con-

verter to any appreciable extent.

About 36% of the total available supply goes into packaging: 10% for military packaging, 12% for essential civilian packaging and 14% for packaging that depends on the free supply. In regard to the future, the following conclusions find some

support in industry circles:

1. There will be no appreciable loosening of the situation until the fourth quarter of 1952.

2. Military requirements are increasing and at the very least will hold at about 45% of the total production during 1952. 3. The free material will remain at about 20% of the capac-

4. Probably there will be an increase in directed end uses. It seems safe to say that the present allocation system under M-45 is working, but demand is constantly increasing and there seems to be no hope of removing polyethylene from controls during the next 12 to 14 months.

Other Plastic Films and Cellophane-R. S. Jones, Dobeckmun Co. The supply status of various packaging films was pictured by Mr. Jones as "fair" to "good." Vinyl films, both east and calendered, are available, even though a large percentage of cast film is used in making barrier materials for defense orders. Capacity is somewhat limited, but no resin short-

Plant expansion for saran film was completed in August of this year, assuring availability of this material for present and new users.

Pliofilm was last allotted in September and now most customers are reported to be in good inventory positions.

There have been substantial increases in production capacity of cellulose acetate, with prospects that the material will be available for old and new customers now and in the immediate future.

Cellophane capacity has been expanded. Although demand has exceeded supply since pre-World War II, there was a period of near balance from April through September this year. Demand at present is stiffening. The future supply status will be influenced by any limitations that may be placed on the use of sulphur.

Metal Cans-J. B. MISENHIMER, American Can Co. Historically, about 37% of the total cans produced in a year are required in the third quarter, Mr. Misenhimer stated. This is due to high seasonal demand for perishable-food cans in that period. During 1951 can maufacturers had no opportunity to

plan in advance to meet stepped-up schedules. Use of tin was limited by Order M-8 and production of cans was regulated by M-25. The timing of reductions under the tin order did not coincide with reductions set forth in the can order. Meanwhile, military requirements made themselves felt and the agriculture program was stepped up.

An impending steel shortage and realization that can manufacturers had been unable to prepare in advance for increased perishable-food packs caused the Government to direct can manufacturers to give priority to perishable-food cans.

By way of contrast, the present M-25 is based on projections covering the 12-month period through the third quarter of 1952 The can-manufacturing industry is thus assured, barring all-out war, of orderly planning. Can users should be free from untimely interruptions and shortages of deliveries that occurred

Although the steel supply is expected to remain tight, the outlook for an orderly supply of metal cans in 1952 within the framework of Order M-25 appears good.

Steel Drums-L. B. KEPLINGER, President, Steel Shipping Container Institute. Order M-75 governs use of steel drums, Mr. Keplinger stated. The supply status is closely tied in with the steel shortage and defense needs. There has been an 115% decline in the supply of steel shipping containers for civilians during 1951. An amendment to M-75 is expected to provide for a 45-day inventory by units.

Steel Strapping-H. C. Bristoll, The Stanley Works. The principal limitation in the use of steel strapping, Mr. Bristoll stated, is on containers when the container and contents weigh under 90 lbs.

Order M-59 permits any steel-strapping user to carry an inventory for a normal 45-day operation, or an inventory of not less than 1,000 lbs.

Steel strapping is a Class B product. Under CMP, all producers receive an allotment for their production. It is desirable for users to employ DO ratings, but not imperative. Rated orders, however, take precedence. If you produce a B product, you can extend the rating you receive on your CMP-4B allotment; if you are in the small-user group, you can apply DO-SU to orders for the steel strapping and related items used to pack your Class B products. Ratings for Class A products, of course, can be extended to strapping orders.

You can use DO-MRO on orders for operating supplies, except on orders for containers or packaging materials. Strapping for bracing lading in box cars is not defined as a container material and DO-MRO can be applied for such use.

At present, only 60 to 70% of all strapping orders are rated, leaving the balance for "free area" use. A revision of M-59to clarify, not relax, provisions of the order-is now under consideration. The outlook for essential supplies of strapping appears to be fair.

PACKAGE EVALUATION PROCEDURES

Chairman, Dr. L. E. SIMERL, Marathon Corp.

The Gelbo Instrument-J. HARTLEY BOWEN, JR., and PHILLIP A. Gelber, U.S. Navy. (A complete, illustrated report on the Gelber-Bowen instrument-a machine for controlled creasing and flexing of test specimens of flexible packaging materials to stimulate conditions of actual use prior to testing-is scheduled for publication in an early issue of Modern Packaging.)

Problems Relating to Insect Resistance in Fibrous Packaging Materials-DR, WILLIS M. VAN HORN, The Institute of Paper Chemistry. Dr. Van Horn presented a critical examination of a proposed test procedure, TAPPI Suggested Method T-473. This method utilizes the cadelle, Tenebroides mauritanicus, as the principal test insect because of the ability of its larvae to bore and chew their way through many strong and resistant materials. The lesser grain borer, Rhizopertha dominica, another trouble-

some insect, is also employed in the test.

The two alternative procedures for testing the resistance of paper to passage of insect life were reviewed. Procedure A employs the completed package, or a substitute therefor, filled with whole wheat flour or shorts and exposes it to infestation. In Procedure B the packaging material is inserted under suitable conditions between the source of infestation and a bait to attract the test insects. In both cases the aim is to measure the number of days required for the insects (or their larvae) to penetrate the barrier.

In Dr. Van Horn's criticism, he pointed out that cadelle larvae are the only phase of the insect's life where it is equipped to bore through a barrier and that the period in the larvae state when it has intense migratory activity is relatively short. This means that, if the test is to be valid, the larvae must be regularly replenished with others of the suitable age. Furthermore, in Method B the test creates un-natural, airtight conditions whereby the insects may die. Or the larvae may pupate and lose their desire to migrate. The latter, however, is not a factor with the lesser grain borer which is also utilized as a test insect.

As a result of the critical review of the tests, new modifications are being recommended, particularly for Method B. Here the test specimen is used in the screw cap of a small Kerr-Mason jar in place of the usual solid head. This is then inserted into the source of infestation and watched for the time of penetration. Apparently this is a test more severe than its predecessor.

New Seal-Strength Test for Coated Papers—John W. Padgett, Moore & Munger, and E. A. Yemmakoff, General Foods Corp. (The complete, illustrated text of this paper will appear in an early issue of Modern Packaging.)

Conditions Affecting the Seal Strength of Waxed Paper—George P. Mueller, Marathon Corp. (The complete, illustrated text of this paper will appear in an early issue of Modern Packageng.)

The Mercury Method for Determining the Blocking Temperature of Paraffin Wax—MORRIS KANE, Kalamazoo Vegetable Parchment Co. Most concepts of what is termed blocking are either (1) the conditions under which the appearance of a surface is impaired when in contact with another surface, or (2) the conditions under which two surfaces in contact adhere to such a degree that they cause trouble. Major factors in these phenomena are composition of the surface, time, temperature and pressure of the contact.

The Mercury Method for determining the minimum temperature at which surface appearance is impaired by low pressures for short periods of time is not a standard procedure, but is undergoing study by a Joint TAPPI-ASTM Committee on Petroleum Wax. This method uses mercury as a means of applying a uniformly distributed pressure to the surfaces under observation.

The method has several advantages and few disadvantages, but a satisfactory definition of impairment of surface appearance has not been attained.

In a 24-step procedure it does, however, give a simple laboratory method of high precision by which an operator can predict the blocking temperature of a paraffin wax under the conditions specified.

PACKAGE AND CONTAINER EVALUATION

Chairman, Allyn Beardsell, Container Laboratories, Inc.

How Long Can Corrugated Fibreboard Boxes Be Safely Stacked?-K. Q. KELLICUTT, Forest Products Laboratory.-Use

of corrugated boxes has increased tremendously, Mr. Kellicutt stated, but the trend has caused warehousemen trouble because of buckling of individual containers when stacked and consequent toppling of stacks.

It was felt, therefore, that a need existed for tests to show performance and load limits of containers so that better loading

and warehouse procedures could be followed.

The Forest Products Laboratory, accordingly, conducted a long-term study to analyze performances of various types of boxes in various controlled atmospheres. The temperature range was from minus 20 deg. F. to 90 deg. F.

In initial tests, conditions very similar to actual stacking of loads were employed. Later, a special compression apparatus was designed and used, for it was believed this would serve better to provide the basic information desired regarding the crushing and crumpling strength of all four panels of a box.

The performance of all boxes tested with the special compression machine followed a uniform pattern divided into three

distinct periods. These are:

- Rapid compression at initial contact as boxes adjust to shock of new load.
 - 2. Constant compression.
 - 3. Period of imminent failure.

Dead loads subjected to 60% of their static compressive strength, it was found, would resist failure for days. However, loads subjected to 85 to 100% of their static compressive strength collapsed within a period of hours or even minutes.

Slight changes in moisture content, it was reported, reduced stacking strength considerably and it was concluded that moisture conditions are responsible for much of the toppling in warehouses.

New Test Method for Evaluating Case Fatigue—CHARLES J.
ZUSI, Container Laboratories, Inc. (This paper will be published in full in a later issue of MODERN PACKAGING.)

A Guide To Effective Package Designing—W. F. Deveneau, National Folding Box Co. Certain information, Mr. Deveneau declared, is a prerequisite to designing an effective package. This information will not enable a designer to produce an effective design, but is an essential background to guide him in creating a package that will produce the desired results from both the protection and marketing viewpoints.

Mr. Deveneau presented several unhappy case histories in which the package was ineffective or resulted in disaster because the designer did not have before him all the facts that should have been incorporated in his thinking before creating the new package. Among them were: a carton for inner tubes which was too tall for the shelf space in filling stations and hence could not be displayed; a manufacturer who adopted a splendid new package without first considering its plant production cost and later found it doubled the previous production cost and would thereby price him out of the market; the coffee roaster who adopted a glued-end carton for bean coffee, forgetting that it had to be opened by the retailer in order to grind the beans, thereby ruining the carton.

Mr. Deveneau distributed to the audience a practical guide consisting of a list of points that should be taken into consideration in planning a package. These points were grouped under six main headings, as follows: (1) product analysis, (2) market analysis, (3) distribution analysis, (4) production promotion analysis, (5) package structural design analysis and (6) package merchandising design analysis.

Package development, such as this, is based on a willingness on the part of the designer to dig for facts and an ability to interpret the salient points that are thus discovered in the finished package. The package that pays profits to its sponsor must be planned to sell the product, not simply be beautiful.

The Technical Side of Developing a Printed Package—Paul. Cope. The Procter & Gamble Co. The technical side of de-

veloping a printed package was defined by Mr. Cope as building a package that can be produced and packed; a package that protects the product all the way to the customer; a package that sales and advertising departments want at a cost the product can afford. By coordinating all these factors from supplier to the ultimate consumer, it is possible to keep all phases in balance. When this point is determined, write clean, clear-cut specifications so that you get what you want.

Teamwork within the company is required in developing such a package. Mr. Cope listed the departments he must draw upon for help: sales and advertising for product sales potentials, kind of packages, appearance, number and size per shiping unit; product quality control for the packed product's quality; package equipment for machine handling; industrial engineering for manual handling; production for equipment, space and people; buying for buying exploration and material development.

Technical packaging coordinates the information from all the foregoing groups, makes sure, by actual test, when needed, that the package will do its intended job. Then the specifications are written. But the job is not complete with mere specifications writing. The technical packaging man should go out in the trade to observe the results of his planning.

The Economics of Container Design—Charles F. Carr, Standard Brands, Inc. (This paper was published in full under the same title in the April, 1951, issue of Modern Packaging, p. 186.)

FOOD PACKAGING SEMINAR

Chairman, DR. WALTER A. MACLINN, Rutgers University.

A Package Method for Measuring Free Oil—A. H. LANDROCK, Massachusetts Institute of Technology. (Mr. Landrock's paper, under the Title "Free Oil in Packaged Foods," was published in full, with Bernard E. Proctor as co-author, in Modern Packaging, Aug., 1951, pp. 107-112.)

Factors to Be Considered When Measuring Free Oil in Food Products—Dr. L. E. Hoad and E. L. Powers, American Can Co. (The difficulties of measuring the tendency of a food to give its free oil to the fibre components of a package, and thereby stain it or otherwise render it unsightly, have occupied the attention of the Packaging Institute's Food Committee for some time and Dr. Hoag is one of several to whom has been delegated the task of laboratory study of the problem. His report was a progress report rather than a completed study.)

Moisture Equilibrium Testing—A Food Committee report by C. M. WOODCOCK, General Foods Corp. Although the value of moisture equilibrium testing is well recognized, there is no one test method which is universally accepted. Many methods have been used with varying degrees of success. The Institute, in a preliminary survey of the various methods, soon decided that extensive experimentation with them all was out of the question due to time and manpower limitation. It was decided to investigate the two methods which, it was felt, seemed most practical for general use. The methods chosen were the Wink Method, which has been in use for quite some years, and the relatively new method proposed by Landrock of M.I.T.

In the Wink Method (see Wink, Willmer A.: "Moisture Equilibrium," Modenn Packaging, Feb., 1947, p. 135), a Petri dish containing a sample of the product is sealed within a glass chamber. The atmosphere within the chamber is held at a known relative humidity by means of a saturated salt solution. The unit is so constructed that the Petri dish and sample may be weighed on an analytical balance without being removed from the humidity chamber. During a test, the dish and sample are weighed periodically—the weight changes representing the trans-

fer of moisture to or from the sample, depending on the humidity. Weighings are continued until the weights become constant, at which time the sample is at equilibrium with the humidity within the chamber. The sample is then removed and its moisture content is determined. In actual practice, a series of these units is prepared, using different salt solutions covering a wide range of humidities. From the equilibrium moisture contents at these various humidities, a moisture equilibrium curve is constructed.

In the Landrock Method (see Landrock, A. H., and Proctor, B. E., "Measuring Humidity Equilibria," Modern Packaging, Feb., 1951, p. 123), samples of the product are first raised to various known moisture contents which cover the range of moistures likely to be of interest for the particular product. For each moisture content of the product, an estimate is then made as to the approximate humidity with which the product is at equilibrium. Accurately weighed amounts of the product at one of the moisture levels are then sealed within chambers, each of which is held at a known relative humidity. One or two of thechambers are at humidities above that with which the product is thought to be at equilibrium. One or two are at humidities below the equilibrium humidity. Sulfuric acid solutions are used for obtaining the desired humidities. After a fixed interval-2 hrs. is appropriate-the samples are removed from the chambers and again weighed. Samples exposed to the higher humidities will have gained weight; those at the lower humidities will have lost weight. These weight changes are plotted on special graph paper which is bisected by a zero weight-change base line. Weight gains are plotted above the base line; losses below. The points are connected by a curve which crosses the zero base line. The point of intersection represents the relative humidity at which no weight change will occur; the equilibrium relative humidity of the sample at the moisture content being tested. This procedure is repeated for each of the samples previously raised to known moisture contents. The equilibrium relative humidities are then used to construct the usual moisture equilibrium curve.

As to the reproduction of results between laboratories, we can see little or no difference in the methods. The spread in results within both methods seems to be in the general order of % to 1% moisture content at any given humidity. Variation is greater at high humidities. It does not appear that a choice may be made between the methods on this basis.

The over-all agreement of average curves for the two methods is surprisingly good. The variation within each method is actually much greater than the over-all between-method variation. There is one difference between methods which occurred with all three products tested: the Landrock curves, in all cases, were lower at high humidities than the Wink curves.

One important and desirable aspect of the Landrock Method is that complete results are obtained in about one week's time. The time factor for the Wink Method is often as long as a month. This was one of the fundamental objectives underlying the development of the Landrock Method and, where results are desired in a hurry, there is no doubt that the Landrock Method is to be preferred.

New Information on the Packaging of Meat—Frank E. Halleck, John A. Rikert, Hormoz Broumand and Dr. C. Olin Ball, Rutgers University. Sponsored by the U. S. Bureau of Animal Industry under a program of the Research and Marketing Administration, a research project on packaging fresh meat for retail distribution is being conducted by the Departments of Animal Industry and Food Technology of Rutgers University. The objective is to discover means to inhibit quality degradation in pre-packaged beef, pork and lamb.

Color, being of first consideration from the standpoint of quality of packaged fresh meat, has received major consideration. A cycle of color change in the meat has been produced which it seems has not previously been investigated. The cycle involves a change from the original red color of the meat through a stage of undesirable color, either gray or brown, and again into

red. The conditions in which these changes occur are, to a considerable degree, critical as to temperature and as to oxygen tension of the atmosphere surrounding the meat. Since this cycle of color change seems to offer the possibility of a means of extending the display life of packaged fresh meats, an investigation of the chemistry of the color changes is underway in an attempt to find a chemical means of producing the color change cycle without producing the deleterious chemical changes which accompany the bacterial action.

Extensive chemical and microbiological data have been accumulated and studied in relation to spoilage of fresh meat as indicated by organoleptic test. The *Pseudomonas* group of bacteria and free acid in fat and lean seem to show best correlation with organoleptic symptoms of spoilage, indicating the probable satisfactory use of these determinations as objective criteria of

spoilage.

Sterilization by Cathode Rays and Its Relation to Packaging —Dr. Bernard E. Proctor, Massachusetts Institute of Technology. (Dr. Proctor discussed informally the subject matter of his paper, which was published in full in Modern Packaging under the title "Sterilizing with Electrons," July, 1951, p. 105, with J. G. Trump as co-author.)

PACKAGE PRINTING SEMINAR

Chairman, E. H. BALKEMA, Colgate-Palmolive-Peet Co.

Testing the Effect of Alkaline Materials on Printed Packaging Materials—Albin H. Twardowicz, The Lord Baltimore Press. Mr. Twardowicz submitted to the printing session a proposed testing procedure for determining the effect of alkaline materials in a package on the printed matter and material of which the package is made.

The proposed testing technique is a very rapid test to predict approximately what will occur after prolonged storage. Each user of the test is urged to arrange correlation studies between the test results and the actual prolonged storage effects. The committee has expressed its collective opinion that a 0.25% solution of sodium hydroxide is the proper strength to use in a drop test on printed material to give adequate information for correct evaluation of the long-time resistance of the printing to alkali.

The number of alkaline products distributed in packages is surprisingly diversified. Examples of such materials are soap, soap powders, lye, water softeners, synthetic detergents, baking soda, washing soda, baking powder, soap shampoos, shaving creams, cheese, cement, plaster, ammonia and the like.

Testing Packaging Materials for Fastness to Light by the Fade-Ometer-George Cramer, Sinciair & Valentine Co. Fading of printed colors and how to predict their permanency is proving to be more difficult than many would suppose, Mr. Cramer stated. Fading is brought about by the ultraviolet rays in light, but the rate and extent of fading is notably affected by other factors which must be reckoned with when predicting colorfastness. Notable among these is the relative humidity to which a test specimen is exposed during a fading test.

At 90% R.H. the amount of fading is about three times as great as at 30% R.H., and at nearly zero percent R.H., no fading occurs at all. Thus, any standardized testing procedure must control the R.H. if the results are to be comparable and the method is to

have high precision (reproducibility).

Despite the difficulties of developing a standardized testing procedure, the subcommittee has proposed two classifications of fading:

Class No. O-Materials which show an appreciable change in color after exposure to one standard fading hour.

Class No. 1—Materials which show no appreciable change in color after exposure to one standard fading hour, but show an appreciable change after exposure to 2½ standard fading hours.

How to Test the Resistance of Printing on a Package to the Product It Contains—L. K. Bunnett, The Ohio Boxboard Co. Testing the resistance of a printed package or label to the product itself, and vice versa, is an obligation for any package printer or package user; for unless the package and its printing is resistant to defacement, it may become unsightly before the contents are used up by the consumer. Dripping of contents down over a label, soaps and detergents spilled on wet packages, or even fumes or alkaline dampness from a volatile packaged material, are examples of the need for printing on a package which will not discolor, stain or disappear when the products are being used and the contents may affect the appearance of the package, or when the appearance of the product itself by contact with the package may be adversely affected.

A subcommittee of the printed packaging materials committee called the product resistance test subcommittee was appointed to study the problem and recommend a test for determining the resistance of the printing under such conditions. A proposed test

was offered for trial and criticism.

In essence, the test requires that printing shall be allowed to dry at least 72 hrs. before trial; specifies in detail the conditions of making the contact of contents and the printing—whether the contents are liquid, paste, dry powders or solids, or soap; and the exact method of holding the specimen undergoing test at 85 to 90% R.H. for periods varying from 10 min. to 24 hrs.

Three types of product resistance are suggested: (1) no change in product or in ink: (2) slight change; (3) excessive

change.

The Use of Statistics on Incoming Packaging Material for Converters and Consumers—Donald Macaulay, Inc. The use of statistics as a tool of management was described by Donald Macaulay, consultant on paper quality control and evaluation. By statistical methods it is possible, he said, to evaluate the intent of a paper manufacturer by determining the deviation of sample tests from the figure that had been specified. Utilizing this technique he was able to discover that paper made on three different shifts of a distant mill was not running uniform. He was then able to segregate the rolls from one shift that were showing the greatest deviation and recommend their use for a different purpose. This led to tagging all roll shipments so that easy identification was possible.

In practical printing and paper making, he pointed out, there is often a tendency on the part of buyers to create specifications that are impossible to meet, such as: "Cut absolutely square;" or "Match sample in all respects;" or "Finish must be perfectly even on both sides." Reasonable variations must be permitted, but statistical evaluation of the variations can reveal when they

are too great or in the wrong direction.

Mr. Macaulay presented a study of basis weight of paper which revealed an overweight condition from one of several supplying mills. When it was suggested that this mill move the weight downward slightly it brought about a saving of about \$7,000 a month to the buyer because of the greater yardage produced per ton.

Brightness of paper may be evaluated by the same techniques and, in one of the case histories presented, it was possible to segregate the lots from one mill and use all its delivery as a unit, thus avoiding non-uniformity of converted products.

Evaluating Test Methods for Predicting the Scuff Resistance of Printed Paper Packaging Materials—MAURINE PONDER, Research Department, Joseph E. Seagram & Sons, Inc. Miss Ponder presented a report on a year's experience with methods of evaluating the resistance of printed paper packaging materials to scuffing or abrasion. Miss Ponder is chairman of the Institute's committee on scuff test.

The committee recognizes two types of scuffing. One is a linear or progressive form of friction, such as would be found when a label or a printed carton were moving on a conveyor in contact with a guide rail. The other is the oscillating type of

friction of printed surface against printed surface, or printed surface against a case liner or cell, during shipment. Miss Ponder reported that no single form of test method was available that would evaluate the resistance of the printing on a test specimen to both types of scuffing.

The effects of the scuffing on the printing itself are noticeable as smearing of inks, defacement of printed material and ink transfer, all of which degrade the printing in the eyes of a dis-

cerning buyer.

While the work of the committee is not yet completed, it has proposed two different test procedures: PI Printing 4p-51 and PI Printing 5p-51.

Color Control in Printing Reproduction—F. L. WURZBURG, Jr., IPI Division, Interchemical Corp. Color control in package printing must, of necessity, start with the selection of the design, Mr. Wurzburg stated. By consulting the printer, board maker and ink maker it is often possible to avoid colors that are difficult to control. But colors often appear differently under different illuminants and the only color specification that will satisfy the need is a spectro-photometric specification. Other types of color specifications, such as dominant wave length, brightness and purity, or hue, value and chroma, merely insure that colors will match under identical illumination, but do not give information about their appearance under a different illuminant.

The simplest attempt to control color at the present time would be the setting up of tolerances, both maximum and minimum limits, yet if there were only three significant variables (out of the many more that exist), such as color of stock, color of ink and film thickness, such an effort would involve two limits for each variable. Thus, eight (2 by 2 by 2) combinations of these limits would exist and even then it would be difficult to determine if any given limit had been exceeded. The problem is exceedingly difficult to solve.

A suggested possible approach to setting up standards and tolerances for package printing that in the present state of color knowledge could be put into practice would involve the follow-

ing procedure:

 Select colors for designs which have the least production variability compatible with desired effect.

2. Establish the primary color specification spectro-photometrically.

 Set up limits corresponding to the more important production variables and preferably specify them spectro-photometrically.

Prepare material standards representing these limits, checking them spectro-photometrically and reviewing them as necessary.

DRUG AND PHARMACEUTICAL SEMINAR

Chairman, Dr. John C. Bird, Lederle Laboratories Div., American Cyanamid Co.

Impact of Defense Mobilization on the National Economy— E. F. Berthand, Assistant Administrator, Defense Production Authority. Mr. Bertrand mentioned the steel, copper and aluminum allocations and indicated that the country has not touched bottom insofar as the effect of the defense program on industrial economy. Defense efforts, he said, had been good, but he estimated it will be a long time before industrial capacity is up to what the experts say will be needed for the defense of a free world.

It is the aim of the DPA, he said, to maintain civilian economy at the highest possible levels while building the country's defenses. Nothing would be greater folly than to cause a collapse of civilian economy. And the fact that the country is not at the moment in a do-or-die struggle does not detract from the seriousness of the emergency.

A controlled materials program, he declared, is the only way to deal with the situation and he said we must have an all-out control system. This was proved by the last war. The priority system didn't work when the paper work became too heavy. It is the aim of DPA to spread the impact as fairly as possible and the steps taken to do so have not been taken with the next election in mind. He said that it was safe to say that the country was miles ahead in its defense program in comparison with the last war. The production of machine tools, for example, is 400% above pre-Korean output.

CMP is not working smoothly yet, but it is functioning adequately for defense and the bugs are being ironed out as far as civilian industry is concerned as fast as the best business

minds of the country can work them out.

He emphasized the need for scrap—steel, copper, aluminum and brass. He urged intensive scrap collection before the snow flies, saying that some mills were operating with less than a month and a half supply ahead.

Current Status of Materials for the Pharmaceutical Industry-ROBERT DE S. COUCH, Director of Containers and Packaging Divisions, NPA, with panel members: HENRY E. GRIFFITH, Plax Corp., and JAMES W. McCLENAGHAN, Reynolds Metals Co. The audience was briefed informally on the supply situation for materials as follows: It is hoped that there will not have to be a cellophane order in spite of the critical sulphur shortage. The demand for closures was off during the third quarter of 1951, but was likely to pick up in the fourth quarter before users could expect any easing. There is less aluminum for collapsible tubes, but it is hoped that there will be enough to keep going. There is greatly increased capacity for aluminum production, but users have increased 50% since 1950. There will be a big dip into aluminum supplies in the next six months before there is any easing. It is expected there will be steel drums sufficient to take care of needs. Glass will be easy for the remainder of the fourth quarter of 1951, but a tightening up is expected for the first quarter of 1952.

Polyethylene for bulk packing of pharmaceuticals and chemicals is under an essential classification. Drug manufacturers should receive sufficient polyethylene and supplies should be ample to cover their needs. Users were told to substitute for

copper wherever possible.

Actual Experiences with DO System—D. L. YOCOM, JR., Abbott Laboratories, and M. K. Dressen, A. H. Wirz Co., Inc. Mr. YOCOM: Thinking in NPA has been gradual but consistent, and by March of this year, while no action had been taken to protect our essential industry, some sections would at least admit that something should be done. This trend continued until, by late August of this year when I was last in Washington, it appeared to me that the essentiality of the drug industry had been thoroughly established. The NPA has conceded that they cannot have their cake and eat it and, therefore, must allot most important uses first, with others to come

later, when any item is in less than overflowing supply.

Decisions during the past 12 months have continually tended to be more realistic and justifiable as time went along. I cannot say that we are being treated unfairly in any division

at the present time.

I understand that when packaging appeared to be getting extremely difficult last March and April, the Drug Section planned to put a man on its staff to handle exclusively packaging problems in our industry. The easing of supplies made this unnecessary, but will indicate that those in the Drug Section are trying to keep abreast of this industry's problems and to provide the personnel necessary to service our requirements.

Mr. Dresden: You are all familiar with the M-27 Order which affects collapsible tubes. The good men administering CMP deserve a pat on the back for doing everything they can

to keep things going without disruption. The tube situation is dependent upon lead, tin and aluminum. For tin, we are entirely dependent upon the outside world. However, any reasonable cause for appeal will usually be given relief. It must be remembered, however, that what may be a hardship in an individual case is not always an industry-wide problem and thus an appeal which differs from others can sometimes be caught up in red tape. It must also be remembered that an appeal for tin foil cap liners goes to a different place from an appeal about tin tubes and the cases must be appealed differently, even though they may concern the same package.

It is obvious that the consumption of tin must be cut down unless we can get more tin from the outside. Fortunately, however, in the last few years tin for tubes has dropped to a minor position in the drug and pharmaceutical fields. Lead and tin-coated tubes are in a much more serious situation aggravated by price practices. Aluminum today is the most important material to tube users and, of course, its availability in the tube field as elsewhere is dependent on military demands and production.

Survey and Exhibits of Parenteral Products Packaging—L. H. Zahrs, Ciba Pharmaceutical Products, Inc. Mr. Zahn reported on a committee study of packaging characteristics based on families of packages submitted by eight companies represented on the committee as follows: Abbott Laboratories; Ciba Pharmaceutical Products, Inc.; Eli Lilly & Co.; Merck & Co.; Sharp & Dohme; Smith, Kline & French; E. R. Squibb & Son; Wyeth, Inc.

Of the products submitted, 73% were reported to be packaged in folding cartons and 27% in set-up boxes. It was pointed out that this could not be regarded conclusively as a trend, but merely a reporting of the packages submitted. It appeared that the folding carton had gained favor for long runs where machine cartoning could be applied, but there was considerable discussion in regard to the break point or small runs where the set-up box has specific advantages.

In the case of vials and ampoules, the packages submitted showed a 66% usage of vials in comparison with 34% usage of ampoules. The new convenience of scored and color-break ampoules was pointed out to eliminate the necessity of enclosing a file for break-off. The speaker said the trend appeared to be toward the use of the single-unit aluminum cap instead of the three-piece aluminum seals. There is apparently a movement toward standardization on the 13-mm. cap for liquids wherever possible. A new package with improved appearance and added utility that attracted considerable attention was one for a syringe mounted on a plastic base. There appeared to be no hard and fast rule for packer units, although one firm has standardized on units of 1, 5, 25 and 100. The trend was definitely for a lesser use of cellophane, only one of the companies represented wrapping its carton packages with cellophane.

Beautiful Vs. Successful Package Design-Albert Kner, Container Corp. of America. In our modern time, when we talk about artists, we have to specify always what type of artwork they are doing. If you deal with a painter of pictures to hang on your living room walls, the only problem you face is to get something that pleases you and maybe your wife, too. But if you purchase commercial artwork to put through a business deal, your need can be space advertising, billboard, mailing piece or packages. To get something which pleases only you will not solve the problem. You require commercial artwork always for a definite purpose and this purpose should basically be extremely simple. You try to sell through this artwork more of the merchandise or to compete with other manufacturers in a more advantageous way. Or sometimes you try to do just institutional advertising when you want the people to remember your merchandise, your trade name or vour trademark.

Still, today, when we have more knowledge about this com-

plicated procedure of merchandising, most people are making the mistake of judging commercial artwork according to their personal feelings.

Because we started to see very clearly a long time ago that the beauty of commercial artwork is not enough to sell merchandise, and because we had to realize that one person's sentimental feeling about artwork is not enough to prove its value, we tried to do successful artwork instead of merely beautiful artwork.

Now there are definite methods in which we can check an artwork before we release it, to find out certain facts about it before it reaches the general public. We have methods to make tests on commercial artwork. We can make public reaction tests and we can do any other visual test to find out whether our illustration of the product is misleading or not.

It seems to me that the best way to illustrate this thinking is to visualize a simple jig-saw puzzle. If you do not have all of the chips in your box, you will never be able to make a perfect picture from it. Thus it is the same, if you solve a great many detailed problems in a project, but neglect one little single phase, your solution will never be perfect and this little phase can easily develop into a large failure.

LINE PRODUCTION OF PACKAGES

Chairman, H. F. Brownell, McKesson & Robbins, Inc. A seminar on specification requirements for efficient packaging-line operations.

Glass-Kenneth Newman, Joseph Burnett Co. Glass specifications, Mr. Newman said, should be prompted only by a definite need; they often fail because a reason for them does not exist. Specifications should clearly define the needs of the purchaser—a specific need, as, in the case of wide-mouth food jars, the paramount need for uniformity so that the jars will run without trouble on high-speed equipment. However, deviations in weight and size are not the problem today that they once were.

Defects in glass containers, Mr. Newman said, are of two types: (1) functional, covering all types of defects that might cause actual physical failure of the container and (2) non-functional, including all factors of appearance. Pointing out the need for a scientific method of sampling incoming containers and a definite standard to serve as a basis for rejection, he advocated the use of the Army Ordnance formula.

The testing procedure should be such that it can readily be duplicated by the glass maker and applied at the source to control shipments. Mr. Newman urged the joint development of specifications and testing procedures by the user and supplier.

He pointed out the necessity of keeping in mind the differences in performance requirements, depending upon the type of product and its handling. Containers for processed foods, for example, must be held to rigid standards for thermal shock, while with carbonated beverages this factor is secondary to the need for withstanding internal pressures.

Closures—C. B. Burnside, Eli Lilly Co. The screw cap, both metal and plastic, is still the biggest factor in the closure field, Mr. Burnside said. Pointing out that the Drug & Pharmaceutical Committee of the Institute had conducted extensive studies on screw-cap closure requirements, he emphasized that specifications for this item must be complete, without loopholes. Points which must be covered, he said, include: (1) size and finish; (2) customer's number and manufacturer's number, if any; (3) type of thread; (4) kind of material, whether plastic or metal; (5) construction details; (6) if a standard design, the precise identification; (7) design and color, if other than standard; (8) liner facing and liner backing.

Of these points, the liner facing and backing is one of the most important and one most frequently overlooked, with troublesome results. The liner must be suitable to the product and also suitable to the method of application to insure a tight seal.

Cleanliness of closures is important to avoid dropping contaminants into the product during capping and users should insist that closures reach them in clean condition. He suggested the use of a small vacuum cleaner mounted on the closure hopper to catch flash and dust. In hoppering caps, it is also advisable to keep the number in the hopper at an absolute minimum for continuous operation.

Attention should also be given to the type of packaging used by the closure supplier. In general, there are three kinds of packs: (1) random, (2) layered, used with larger sizes, and (3) the newer practice of rolling or tubing the closures in a single column, which he considers an excellent method.

Methods of closure application are either (1) hand and chuck, or (2) by automatic or semi-automatic machine. Whatever method is used, uniformity of torque is essential to predictable performance. Torque-testing instruments are available to control this, but the ideal method is still to run only one size and type of cap on one machine to avoid troublesome adjustments of torque involved in change-over.

Folding Cartons—E. H. Balkema, Colgate-Palmolive-Peet Co. There is no easy way to specify or to obtain folding boxes that will adequately meet the needs of the packaging equipment. Correct sizes and properties of folding boxes can be specified only after exacting care has been taken to insure that the "diet" of automatic packaging equipment is to be satisfied and this must be followed up with a series of check-ups during their production and again afterwards just prior to production runs.

In enumerating the several steps to be taken, Mr. Balkema gave the following: (1) Determine the dimensions of the box after making proper allowance for outage, proper fit, etc. (2) Select the type or style of folding box, remembering that it must fit the machine. (3) Select the kind and weight of board stock. (4) The characteristics of the printing inks must be determined. The right amount of scuff-resistance must be obtained to prevent smearing caused by sliding along guide rails. (5) A further ink characteristic to be determined is its resistance to the effect of contact with the product in the package. (6) Make the detailed drawing of the flat dic-cut sheet.

The next steps are to prove the correctness of the foregoing interpretations of the needs of the package. These steps include: (1) Get die-made unprinted samples and test them empty in the machines that are to use them. If changes are necessary this is the time to order them. (2) Pack samples with the product on the production line and conduct shipping tests, either actual or simulated. Machine testing is standard operating practice with many companies and should always be done before giving an OK to the printer. (3) Check the artwork to see that it conforms to the mechanical drawing of the flat die-cut sheet. This drawing must be furnished to the artist before he makes his drawing. (4) Check plates for agreement with mechanical drawing and artwork. Take nothing for granted. (5) Check die-cut sheets for agreement with mechanical drawing and artwork. (6) Inks must be tested prior to actual printing. (7) Only now is it proper to authorize printing. (8) As soon as possible after the start of printing, get folding boxes and test them again under production conditions. (9) If OK, then authorize their use for production.

Mr. Balkema then told the group of the difficulties they may experience in selecting board stock and cautioned them that the standards adopted by members of the National Paperboard Assn. are to be used as a guide, rather than as an accurate rule, for the products of different types of mills.

Labels—MAURINE PONDER, Joseph E. Seagram & Sons, Inc. Four steps are involved in determining workable label specifications for efficient production-line operations: (1) the specific objective of the label specification; (2) the type of label speci-

fication needed; (3) the development of the specifications; (4) the correct application of the specifications.

The primary objective is to insure superior performance of labels on the production line. All the many operating variables that may be encountered should be considered. Examples are: sporadic use of glassware with defective labeling panels; non-uniform label adhesives that fail to provide the necessary tack, or machine glue-rollers, transfer pads and wiper pads that lack perfect adjustments; abnormal atmospheric conditions such as excessively high relative humidities. The latter necessitates critical adjustments of the machine pressure pads to compensate for the retarded drying time of the label adhesive.

The type of specification needed is one that is clear and concise and states in terms of performance results what is required of the finished label rather than detailed requirements for the component parts. It would be difficult or impossible to identify, for example, a specified varnish and if a varnished label were too stiff or lacked scuff resistance it would be difficult to place the responsibility for the undesirable characteristics. Furthermore, porosity of the label paper may influence the effectiveness of a varnish coating.

Comprehensive plant studies are needed to carry out the third step—the development of the label specification—for it must include the labeling operational problems and the types of labeling equipment and supplies that are used. Examples of the former are: relative smoothness of the adhering surfaces, penetration characteristics of the glue, or the number of labels to be affixed simultaneously (neck ribbons, stickers, or face and lack labels).

Research studies have shown that in most instances labels, difficult to apply at 120-140 bottles a minute, were easy to apply at slower speeds of 60-90 bottles a minute. Yet some labels have presented no application problems even though bottles had uneven contour of labeling panels; or glues were not uniform; or glue rollers, glue pads or pressure pads were imperfect; or abnormal atmospheric conditions existed.

Laboratory investigations of complaint labels have revealed that, in most cases, these labels were low in water absorptiveness—below 25 grams per square meter—or that sometimes the pebbling was very light and failed to extend to the edge of the label. Also, neck ribbons that presented difficulty were incorrectly grained. But in every case the labels that caused no reported difficulties, even under abnormal operating conditions, had a water absorptiveness within a well-defined range. Laboratory evaluations of identical labels from five different suppliers were found to agree with reported performance in the same plant.

Superior-performing labels can compensate for many operating variables. Make sure that the specification states clearly and concisely what is needed in terms of performance results required in the plant where the labels are to be used. Effectiveness of the specifications may be followed by correlating laboratory evaluations of incoming shipments with their actual performance on the production line.

Corrugated Containers—ED WORDEN, Container Laboratories, Inc. Proper specifications for a corrugated container, Mr. Worden said, should include: (1) style of box, (2) inside dimensions, which are customarily given length by width by depth, (3) bursting strength, (4) type of manufacturer's joint, (5) flute, (6) direction of corrugation, (7) printing requirements and (8) packing, bundling and marking.

Requirements of the particular line on which the box is to be used should be considered. Do the boxes arrive knocked down or set up? How about storage space in the area in which the boxes are to be used? Even such apparently minor details as the type of flute and manufacturer's joint can make an appreciable difference in storage space where large quantities are to be stocked. However, any changes to conserve space must also take into consideration the production-line requirements.

The location of flaps, whether end or top, may be determined

by the method of packing; manual packing would require one style and machine packing another. Overlap flaps may not be stable for stacking where knocked-down containers are to be

stored in high stacks.

Mr. Worden pointed out the numerous possible arrangements of unit cartons within a shipping case (see "Shipping-Case Economy," MODERN PACKAGING, Oct., 1951, p. 85) and urged that time and motion studies on speed of packing be considered as well as the most economical dimensions.

Chairman, A. M. IACONO, E. R. Squibb & Sons.

Equipment Requirements for Automatic and Semi-Automatic Fluid Lines—E. R. HAMM, Sharp & Dohme, Inc. To determine the proper equipment for fluid packaging lines, consideration must be given to the many factors involved, such as length of runs, viscosity of materials to be packaged, range of bottle sizes, label and cap sizes, and type of cartoning or packaging requirements. Competition has forced many industries to do a better job than others and it is probably fair to state that the drug industry is not as competitive as others, like foods or cosmetics.

Many a company has purchased equipment in anticipation of a good return on the investment and then has unhappily found it has lost a still larger percent because of the cost of change-

over time and added maintenance.

The straight line or chain type of unscrambler handles round bottles successfully, but gives difficulty with the oval type of bottle because of overlapping and blocking in the discharge end. This requires an extra operator to keep the bottles moving.

An inverting type of bottle cleaner has been very satisfactory, but an upright type of bottle cleaner was unsatisfactory. A vacuum filling unit has proved very satisfactory for the less viscous liquids. The piston type of filler is, however, necessary for the liquids of higher viscosity. An automatic bottle capper has proved particularly good with respect to freedom from scratching bottle caps.

A cartoner was described which, though it requires 5 hrs. for a change-over from a small to a large carton, does a very satisfactory job provided the cartons are correctly made. Sharp & Dohme makes most of its own cartons and has set up dimensional controls and uses the type of carton board that gives the most efficient cartoning operation. Better line-production efficiency is obtained with these cartons than with outside purchases and is due to the fact that the company's own cartons are made for a single specialized purpose, whereas commercially produced cartons are made for a variety of companies.

Parenthetically, he explained that the cost is much lower despite the specializations because the plant runs two shifts and at full capacity, producing upwards of 2,000,000 cartons a month, die cut on a platen press from sheets smaller than

28 by 34 in.

Cost of the foregoing liquid packaging line was \$86,000. A minimum economic run is 7,000 units, but 40,000 and up is more desirable. Good equipment is not, however, the complete answer to good productions. Good maintenance is essential when fully automatic lines are used. A serious complaint arises when the equipment requires many times the quarter to half-hour, averred by the seller, to make a change-over. The equipment builder should get closer to the user's problems.

But even with the best of equipment and the best of maintenance mechanics, the supplies themselves also must be good. To insure satisfactory supplies, an inspection of incoming supplies is imperative and their purchasing must be based on good specifications. Most companies now utilize a statistical-control check on all supplies. (See "Formula for Quality," MODERN PACKAGING, Oct., 1951, p. 65.) A testing laboratory well equipped with every device and instrument recommended by American Society for Testing Materials is a highly useful adjunct for inspection of supplies, but the detail of the specifications must be commensurate with functional end use of the product.

PETROLEUM PACKAGING SEMINAR

Chairman, R. CHESTER REED, The Texas Co.

Mr. Reed discussed the objectives of the petroleum packaging committee, which are: simplification of packaging lines handling petroleum products, the development of standards for various types of containers and free exchange of information among the 34 member companies participating in the work of the committee. Subjects now being studied by the committee are: standardization of cans, substitute packages, metal drums, grease cans, containers for petroleum waxes and export packages. A report on each of these subjects was given by chairmen of the investigating groups.

Cans—F. N. Landon, Sun Oil Co. Mr. Landon reported that his committee is studying the following problems: (1) overfill of lube oil cans; (2) standardization of 1-qt., 1-gal. and 5-qt. round cans; (3) cartons for 5-qt. cans; (4) standardization of 2-gal. F-type cans; (5) materials handling of petroleum packages.

Substitute Packages—W. J. Woon, Atlantic Refining Co. Substitutes for the 1-qt. metal oil can have been investigated. Both paper and glass have been considered. No improvements in paper containers were noted. Glass is being used successfully, but this adds to shipping costs. Returnable glass containers can be used. Dispensing of oil at filling stations from bulk shipping containers is increasing to some extent. Some West Coast stations are pumping metered quantities of oil into cars—similar to present dispensing practice for gasoline, but the practice is quite limited.

Metal Drums—A. Douglas Murphy, Esso Standard Oil Co.
The committee on metal drums is currently studying these
major projects: (1) Improvements in the 55-gal. drum; (2) standardization of methods for reconditioning drums; (3) industry
approval and acceptance of standards for a 120-lb. grease keg.

Grease Cans—GLENN WHETZELL, Standard Oil Co. of Indiana. Three sizes of grease put-ups—1 lb., 5 lb. and 10 lb.—have been studied. Other sizes have been eliminated from consideration and it is thought one or even two of the abovementioned sizes could be eliminated in the interests of standardization and economy.

Petroleum Waxes—G. P. Nelson, Shell Oil Co. Cartons and other types of packages are being investigated for possibilities of standardization. A questionnaire has been circulated in the industry and tabulation of replies will be used as the basis for further study of the container problem.

Export Packaging—F. J. Beck, Cities Service Oil Co. Mr. Beck reported his committee is beginning investigation of petroleum export packaging. The subject is complex and the committee is seeking information to be used in charting its projects.

Statistical Quality Control Methods Applied to Can-Filling Operations—Bon Mellon, Gulf Oil Corp. The overfill of motor oil in 1-qt. cans can be controlled by use of statistical methods and an accurate vernier scale setting of the filling machine, Mr. Mellon stated. Overfilling is necessary because the clinging nature of motor oil requires that a drainage allowance be made to permit full-quart delivery to the consumer.

The amount of drainage allowance depends on company policy, but it benefits nobody and yet costs the company considerable sums of money. If a filling line were operating at 200 cans a minute, equivalent to 71 barrels an hour, each 1% of unnecessary overfill is equivalent to 0.71 barrels of oil wasted in every operating hour. Under the preceding conditions, the saving of 1% of overfill of oil valued at 25 cents a quart would amount to \$29.82 an hour or \$54,300 a year based on a 35-hr. week of operation.

Statistical examination of the overfilling problem at Gulf showed no evidence that the average volume delivered to each can was affected by any source of variation other than the machine-setting itself. This was a "fortunate discovery," for it meant that proper adjustment of the machine for different filling temperatures would deliver the same average volume of any

grade of oil when corrected to a 60 deg. F. basis. This discovery led to the redesign of the vernier scale on the fillingmachine adjustment so that, when its reading in deg. F. corresponded to the temperature of the oil being filled, the average volume at 60 deg. F. would be constant.

The next step was to eliminate the variations in the individual pockets of the filling machine, a problem in which statistical methods were useful to decide which, if any, were incorrect. After identifying the offender, it then required considerable mechanical ingenuity to bring about the required correction of the volume of delivery of the incorrect pocket.

Sub-Surface Drum Filling-C. R. IRONS and FRED W. LANG-NER, Socony-Vacuum Oil Co., Inc. Sub-surface filling of 55-gal. drums has greatly speeded filling operations at Socony-Vacuum's Paulsboro, N. J., refinery, Mr. Irons said. Previously, over-surfacetype filling had been the practice and at best not more than 30 drums an hour were filled. Sub-surface filling, however, permits one operator easily to average 100 or more drums an hour and filling speeds as high as 120 drums have been attained.

The filling device used consists of one large and one small air cylinder, a filling tube containing a smaller concentric vacuum tube, a foot valve and several microswitches operating solenoid valves. (A prominent scale manufacturer will soon place this filling device and a combination weighing unit on

Socony's filling device was designed to meet the following requirements:

1. The tube automatically and rapidly moves to its lowest position, with the outlet end just clearing the bottom of the

2. The nozzle outlet design is such that initial flow of the product will hold foaming and kinetic effect of the fluid stream

3. As the liquid level rises, the tube begins to rise just after the outlet end is covered and continues to rise, maintaining submergence until capacity of the drum is reached.

4. When flow is stopped, the tube clears the top of the drum and dripping is kept to a minimum.

In actual practice, where high-speed filling of a number of grades of oil is required, it has been found feasible to utilize two of the sub-surface filling units in a series. The operator positions the two drums under the twin nozzles and starts the operating cycle with a push button. While the two drums are filling, the operator inserts and tightens the plugs and installs a metal seal cover on the preceding two drums, using pneumatic tools suspended within easy reach.

Increased output per man hour is only one of the benefits obtained by sub-surface filling. It is now possible to fill 55 gal. into nearly all 55-gal. drums. This represents a saving in container costs at one refinery of over \$300 a day. Another large saving results from increased accuracy of filling, which is now within 1 or 2 lbs. in 400, or a variation of not more than one-

half of 1%.

The petroleum session continued in the afternoon with addresses by Col. Way of the Munitions Board (substituting for Rear Admiral Morton L. Ring) and Mr. Ainsworth of the American Standards Assn.

Petroleum Packaging for the Military-Col. John A. WAY, Military Packaging Controls, Munitions Board. The Munitions Board is responsible for the feasibility of packaging. It has five major directorates and one of these is Supply Management, which has the job of procurement and distribution of supplies, including packaging, preservation and packing for storage and shipment.

The problems of distance and speed in modern war have, of course, multiplied the complexity of packaging for the services. Great quantities of fuel and oil are used, requiring a "pipeline" system to back up the services.

Initial requirements are figured in bulk and then are diverted

into packages for use. Packaging requirements can be met at

procurement or at the most forward point of distribution.

The 55-gal. drum and the 5-gal. "blitz" can are the most popular containers for military petroleum packaging-the 55gal. drum for island operations, such as those carried out in the South Pacific, and the 5-gal, can for inland operations. The 5-gal. can is used in Korea. Operations there offer characteristics that are half island and half inland. The services, of course, also use many small special packages for petroleum products.

About 3.6% of the military's total requirement for carbon steel goes for 55-gal. drums and 5-gal. cans. This figure is fairly stable in relation to military equipment demand and moves up or down according to the amount of equipment being used.

In regard to the marking of shipments, MIL-STD-129 is available and contains a section on marking petroleum containers. This marking handbook will be pertinent only to new contracts. Unless otherwise specified, methods for present contracts should be carried out as originally indicated.

American Standards, What Are They and How They Are Established-Cyril Ainsworth, American Standards Assn. An American Standard is not a standard formulated, published and distributed by the American Standards Assn. It is one that is thoroughly American in that it is developed under American principles of democracy, represents the composite thinking of all groups and has been formally accepted by such groups, winning its designation "American Standard."

After their approval and publication, American Standards are presented to the country for such voluntary action as may ap pear to be of advantage to all concerned. There is nothing mandatory about the use of American Standards.

The ASA program, of course, carries all the benefits that come with standardization. There are three other benefits, however, that are not always recognized.

One is the importance of the ASA program as public relations. Another, is in the field of Government relations. The third lies in the legal aspects of standardization.

In regard to packaging, the standardization of packages from the point of view of savings to the manufacturer shows million of dollars could be saved in the construction of the various units involved. It is true that the consumer pays these wasted dollars but the industry also suffers when it prices itself out of the market or loses to competing industries-to the frozen food locker, for instance.

It can only be hoped that the standardization project (currently sponsored by the Institute's committee on petroleum packaging) on the 1-qt. and 5-qt. oil cans will go forward to completion under the procedures of ASA. The experiences of this project and of this discussion and further discussions will stimulate interest in and acceptance of the work of ASA.

PRODUCTION SEMINAR

Chairman, JOHN A. WARREN, American Home Products Corp. Members of the panel: Food Carton Lines, W. P. SCHOMMER, General Mills, Inc.; Drug Packaging Lines, R. Ross KITCHEN, Charles H. Phillips Div.; Glass Lines, J. K. Dotts, Joseph E. Seagram & Sons, Inc.; Can Lines for Foods, W. B. RENTON, H. J. Heinz Co.; Can Lines for Other Products, F. N. LANDON, Sun Oil Co.; Flexible Package Lines, WILLIAM G. WILEY, Stevens-Wiley Mfg. Co.; Glass Carton and Can Lines, J. W. KRAUSSER, The Procter & Camble Co.

The Production Seminar was based on 55 questions gathered by the chairman by letter from various members previous to the Forum. The questions covered the following subjects: production-line problems, maintenance, operation for most efficient production, layout of packaging lines, procurement of equipment and packing-room organization. Nothing short of a verbatim report could cover completely the various aspects of the answers to the questions that were put to each member of the panel who replied with respect to procedure in his own company. The value of the meeting was in hearing the assorted points of view representing a cross section of many industries and their many different packaging problems. From these, each member could make his own conclusions or interpretations on operations in his own packaging departments.

The first group of questions dealt with maintenance, opening with a discussion of whether the maintenance department serving the packaging lines should be under the control of the plant maintenance group or responsible to the packaging line supervisor. The next question: "Do you recommend that line operators for each individual line make minor repairs on the line?" raised a number of questions as to what constituted minor repairs. Some of the panel members said, if by "minor repairs" was meant "minor adjustments" to machines, then they would say such repairs could be made by the operators, but in general it was felt that operators-often young women-did not have the skill to make machine repairs. Therefore, the making of repairs should be done by a mechanic.

Considerable discussion was devoted to time factors for change-over from one product or one size of package to another. The answers ranged all the way from five or six change-overs made in a day in a contract packager's plant to a crew of mechanics working for a week to effect a change-over in a drug plant. Ordinarily, most firms represented stated they tried to make change-overs at night or over week-ends, some saying they never made any change-overs during regular shifts.

In the matter of clean-up, some members of the panel stated that they employed mechanics to do the clean-up if union ontracts permitted, others had porter crews for clean-up, while till others expected every-day clean-up after each shift to be done by the operators as part of their regular jobs. More thorough overhauling was left to the mechanics.

Some firms maintain incentive bonus systems for line operaors and some firms penalize mechanics if more time is conaimed in making change-overs than is allowable. But no general conclusions as to practice could be made from the discussion on this subject.

Many programs are in effect, apparently, for training mechanics. All, of course, it was pointed out, are dependent on the union contracts. Jobs must be posted and bids accepted then there are openings. The importance of good job classifications was stressed and more and more firms appear to be using aptitude tests to reveal an applicant's ability.

In answer to the question whether specific procedures were prescribed for changing over a line, most panel members indicated that the change was usually started from the head of the line. In many cases no time limit is set for final adjustments for efficient running of the machines. The mechanic is given the opportunity to spend as much time as needed to get up speed.

Some firms differentiate between preventive and corrective maintenance. Some have programs for complete overhauling during off-season periods. Others do an overhaul every year, with a complete overhauling every three years. On the corrective side, some firms have prepared complete manuals on corrective maintenance procedures for plant foremen and mechanics. And, of course, there are daily maintenance programs in effect. In certain instances there are special mechanics who do preventive maintenance in addition to regular work.

The practice of keeping a log for the daily reporting of mechanical faults is quite common and some firms have a definite plan for making corrections. Some firms have 2-hr. inspection for the reporting of deviations in mechanical efficiency.

Cost records for maintenance are kept in a number of different ways-one firm keeping records by lines, not machines. In another case, the records are kept in such detail that they can be broken down to an actual unit cost on a 12-bottle case.

When a machine has an excessive record of down time, it is possible to study the causes in a number of directions through statistical quality control-relating the log-book records of performance to abilities of personnel and the characteristics of the packaging supplies or materials handled.

Most firms have specific classifications for mechanical personnel, often dependent upon union contracts. Some firms have as many as 10 classifications for mechanical personnel. In a number of instances, however, the division is made as follows: (1) first class mechanics, (2) shift mechanics, (3) mechanic's helper and (4) trainee.

Most of the panel members agreed that the ideal place for the mechanic's workshop is adjacent to the packaging line. But this is not always possible when operations are on different floors or when packaging operations are in process in a number of different buildings. In such cases it has been found possible to have simple tool equipment on the floor for minor adjustments, but that for any major repairs or tooling, the work must be done in a centralized machine shop conveniently located.

The use of lights and bells on the lines by means of which operators can summon mechanics when needed is becoming a common practice. Some lines are even equipped with signal devices which will summon repair personnel when urgent.

When ordering new equipment, it was generally thought to be wise to consult mechanical maintenance groups for their intimate knowledge of mechanical problems and for the assistance they can give in making recommendations for replacements.

The methods for reducing overfill aroused wide interest among all groups of packagers present, whether they were concerned with free-flowing products or liquids. This is a problem of every packaging department which uses mechanical filling equipment at high speed. Several of the panel members reported the tolerances acceptable in their respective fields to meet not only consumer requirements, but mandatory rulings. One important point was brought out: it is sometimes better practice to balance the economics of the machines with the tolerance of the overfill. In other words, it may sometimes be more efficient to allow a higher percentage of overfill to maintain speed than to sacrifice speed for slightly more accurate fill.

In the case of volumetric filling, some experience indicates that a more accurate fill can be achieved by controlling the size of the granule, but no one present had conclusive data to report on this point.

It was conceded that check weighing before sealing is more efficient than after to eliminate waste of rejects, but this again depends on the set-up of the operation. Automatic check weighing was felt to be especially practical for products such

as prepared mixes, where a specific recipe is involved. Fair and just rejection allowances when using paekaging materials on automatic packaging lines were reported as:

Folding cartons, % to 2% Glass bottles, 2%

Caps, %%

Labels (guillotine), 1% Labels (die-cut), %%

Flexible films, 2%

Rubber or fibre inserts in the chucks were reported to overcome scratching of caps in capping machines. More gentle sorting arrangements and the use of hard-surface caps were reported to be helpful in this problem. Standard torque testers were used quite generally for measuring the torque of closures.

Labelers were pointed out in one question to be a constant cause of trouble. Steps recommended for eliminating shutdown time on labelers were to maintain constant checks of machines, to keep an operator on duty and to make adjustments frequently and accurately.

In respect to glue on labels, the consensus was that application of the glue on the label usually gave better results than application of glue on the bottle.

Branding and perforation methods of coding were discussed and one method of coding inside a cap liner was reported.

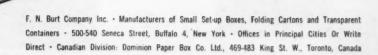
Considerable discussion centered on the question of the proper operating efficiency for an automatic cartoning machine. An average of 95 to 100% was expected by some of the panel.



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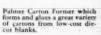


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Charles V. Southwick Jr. . Technical Editor

Methods of rating film durability

A DISCUSSION OF INSTRUMENTS AND PROCEDURES FOR MEASUREMENT

OF FLEX LIFE, IMPACT STRENGTH AND TEAR STRENGTH. By D. W. Flierl*

Thin films of all types, ranging from paper to polythene, are widely used in the packaging field. Intelligent selection of a film suitable for a specific packaging application requires a thorough knowledge of the physical properties of the packaging film, as well as detailed information concerning package specifications.

It is the purpose of this paper to describe four instruments and methods which have been developed for the measurement of three physical properties of films. These properties are flex life, impact strength and tear strength. The instruments and methods have been applied successfully to films of widely differing characteristics over rather large ranges of temperature and relative humidity.

Measurement of flex life

The Du Pont film flex tester is an instrument designed to measure the ability of thin films to withstand repeated flexing. It has been developed in this laboratory during the past few years. One important feature of this instrument is that a measure of the number of flex cycles to incipient failure (i.e., the formation of a pinhole) is obtained automatically for each sample.

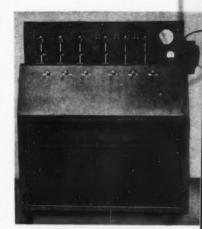
The flex test instrument described here (see Fig. 1) incorporates provisions for wide ranges of control over a number of test variables. A Thy-Mo-Trol drive provides continuously variable control of flexing rate from 30 to 600 cycles per minute. There are six positions, each driven from a countershaft through an adjustable cam arrangement which permits setting the stroke length to any desired value between zero and % in. Each position is equipped with a separate clutch and its own counter, allowing independent operation of the individual positions.

A pneumatic system is the heart of the instrument. A small blower supplies air at 1 to 2 p.s.i. (25-50 in. of water) through a storage tank, to a pressure-regulating valve. From this valve, air at 6-in. pressure is supplied to a manifold, which in turn supplies air at this same pressure to the upper tube of each position through an orifice. The test specimen, formed into a cylinder, is inserted between the upper and lower tubes so that the 6-in. pressure is maintained inside the cylinder. The reciprocating motion of the lower tube alternately crumples and straightens the specimen until a pinhole is formed. Specimen flex life is the number of cycles, shown on a counter, required to produce a pinhole (or holes) through which air will flow out quickly enough to cause the pressure inside the specimen to fall

A pressure-sensitive switch on each position closes the electric counter and pilot-lamp circuit at 6-in. pressure and opens the circuit when the pressure falls to 3 in. Adjustment of these switches to the correct operating levels is facilitated by a regulated

bleed valve which acts as a simulated pinhole. Prevention of air-pressure fluctuations, caused by the alternate crumpling and straightening of the specimen during test and which would disturb the operation of the pressure-sensitive switch, has been accomplished by incorporating a liquid (kerosene) seal arrangement at the lower end of the driven tube which provides almost constant volume in each position during flexing.

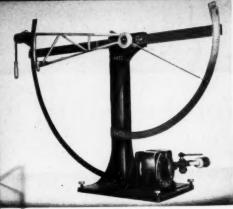
The method of testing is as follows: Specimens 2½ by 2½ in. are formed into cylinders 2½ in. high by 13/16

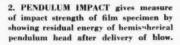


1. FILM FLEX TESTER developed by DuPont automatically provides a measure of the number of flex cycles to incipient failure.

⁶ Chemist, Yerkes Research Laboratory Film Dept., E. I. du Pont de Nemours & Co., Inc., Buffalo, N. Y. ¹ Polythene is the Du Pont designation for polyethylene.

Two instruments for measuring impact strength







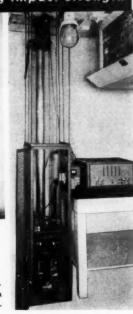
in. in diameter, using %-in.-wide pressure-sensitive cellulose-base tape to seal the vertical seam. Six of these specimen cylinders are then fitted onto the six positions of the flex test instrument and fastened to both the upper and lower tubes of each position with pressure-sensitive cellulosebase tape. It is important that the lower tube be set at the bottom of its stroke before the specimen is sealed in place. When the pilot lamp lights (indicating proper operating pressure has been reached inside the specimen), the operator engages the clutch to begin the test. When the pilot lamp is extinguished, the number of cycles is read from the counter and recorded as the flex life of that specimen.

The data reproduced in Table I are typical of those obtained on the Du Pont film flex tester.

Examination of the data we have obtained has indicated that in order to obtain a mean value, reproducible to within ± 10%, 95 times out of a hundred, 25 specimens are required.

Measurement of impact strength

Two instruments designed to measure the impact strengths of thin films have been built and evaluated. The



first of these is a pendulum-type instrument which is best applied to lowimpact, low-tear-strength films. Later, another instrument, based on a falling-ball principle, was developed to increase the range and precision of film-impact-strength measurements.

1. Pendulum impact tester. In principle, the pendulum instrument is the same as the Izod and Charpy instruments (1)2. The impact strength of the specimen is calculated from the residual energy of the pendulum, after the impact blow has been delivered. The pendulum of the film impact instrument (see Fig. 2) is fitted with a hemispherical head, A film specimen is positioned in the path of the impact head so that the impact blow is delivered perpendicularly to the plane of the sheet. The pendulum swings on through the specimen, carrying an indicating pointer along to show the maximum height of swing on a quadrant calibrated in terms of residual energy of the pendulum. Impact strengths between zero and 20 Kg.Cm. may be measured with this instrument.

Data typical of that obtained from this instrument are reproduced in Table II.

It has been calculated that 20 specimens are required to obtain a mean value which is reproducible to \pm 10%, 95 times out of 100.

2. Falling-ball impact tester. The falling-ball impact test instrument (shown in Fig. 3) measures the energy lost from a freely falling sphere

² Numbers in parentheses identify References, appended.

TABLE I-FLEX LIFE OF A REGENERATED-CELLULOSE FILM

Test conditions:	Stroke lengtl	—¼ in., rate F., 35% relativ		per minute,	tested at 75 deg.
521	887	703	864	466	342
743	472	710	651	403	605
436	355	653	450	683	551
358	854	686	614	904	971
600	604	875	600	664	678
	Stand	flex life \overline{X} and deviation decient of variation	s = 172 c	cycles cycles × 100 =	27.3%

TABLE II—PENDULUM IMPACT STRENGTH OF A REGENERATED CELLULOSE FILM

Test conditions:	75 deg. F., 35	% relative hum	idity		
4.67	6.56	6.69	6.81	7.83	5.85
7.95	5.65	5.20	6.63	4.73	5.85
4.86	6.24	4.73	5.78	4.07	6.94
6.24	5.78	6.63	4.00	7.76	7.00
5.85	7.00	7.57	4.93	5.65	6.34
	Standard	pact strength X deviation s nt of variation	= 1.07	Kg.Cm. Kg.Cm. 100) = 17.7%	

when it breaks through a film interposed in its path. Film impact strength is calculated from the difference between the velocity of a sphere after it has broken a film specimen and its velocity when allowed to fall freely from the same height.

These sphere velocities are measured by a phototube-light beamtimer arrangement capable of measuring short-time intervals to 0.0001 second. Two light beams, spaced d Cm. apart vertically, are projected horizontally across the path of the sphere into the phototubes. The time interval between the interruption of the upper beam and the interruption of the lower beam by the falling sphere is measured on an electronic timer.

For a measured time interval, the height of fall may be calculated from

$$H = \frac{\left(\frac{d}{t} - \frac{gt}{2}\right)^q}{2 g}$$
where
$$H = \text{height of fall, cm.}$$

$$d = \text{light beam spacing, cm.}$$

$$t = \text{interruption} \quad \text{Sample}^1 - \frac{1}{\sqrt{1 - t^2}} a^2$$

$$g = \text{acccleration due to gravity (980 cm./sec/sec.)}$$

$$d$$

¹ The sample is approximately 5 cm. above "a." This position has been selected to insure that the ball has broken through the sample completely before interrupting the upper light beam.

and the kinetic energy of the sphere (of mass M, in Kg.) at "a" is

$$KE = \frac{M \left(\frac{d}{t} - \frac{gt}{2}\right)^2}{2g}$$

Similarly, the kinetic energy of the sphere, falling from the same height, but breaking through a specimen is

$$KE' = \frac{M\left(\frac{d}{t'} - \frac{gt'}{2}\right)^2}{2g}$$

and the impact strength of the film may then be represented by the difference between these two energies

Impact strength = KE - KE'

$$= \mathbf{M} \left[\frac{\left(\frac{\mathrm{d}}{\mathrm{t}} - \frac{\mathrm{gt}}{2}\right)^2}{2 \mathrm{g}} - \frac{\left(\frac{\mathrm{d}}{\mathrm{t'}} - \frac{\mathrm{gt'}}{2}\right)^2}{2 \mathrm{g}} \right]$$
$$= \mathbf{M} \left(H - H' \right)$$

With d fixed at 12 cm., a table relating H to t was prepared so

TABLE III—FALLING-BALL IMPACT STRENGTH OF A REGENERATED CELLULOSE FILM

Test Conditions: Ball 2½-in. diameter, 1045 g., steel
Height of fall—2 meters.
Clamp—3-in. diameter.
Tested at 75 day E 35% relative humidity.

Free-fall value		Impeded-f	all values
Time (millisec.)	Height (cm.)	Time (millisec.)	Height (cm.)
18.65	205.2	21.00	160.5
18.60	206.4	21.00	160.5
18.70	204.1	20.95	161.3
18.65	205.2	21.30	155.9
18.60	206.4	19.70	183.4
18.70	204.1	20.25	173.4
18.65	205.2	20.95	161.3
		21.75	149.8
Mean free-fall height	205.23 cm.	20.40	170.8
Mean impeded-fall height	-163.66 cm	21.05	159.7
	41.57 cm.	Mean impeded-fall hei	
	× 1.045 Kσ.	Standard deviation s	= 9.13cm.

Mean impact strength = 43.46 Kg. cm.

Coefficient of variation $\left(\frac{s}{X} > 100\right)$ = 5.58%

that from t and t', H and H' may be readily available.

The instrument components are rigidly mounted on a steel frame. The electro-magnet release may be adjusted and clamped at the desired release height, which in this instrument may range from a few centimeters up to 2 meters above the specimens. The specimen clamp, fixed at about 2 ft. above the floor, supports the film horizontally in the path of the sphere. The clamp on this machine allows a maximum specimen diameter of 3 in. The light sources and phototubes are mounted below the clamp. The timing unit and the D.C. power supply for the electro-magnet release are mounted separately.

The following procedure is used in making impact measurements on film specimens: After an initial timer warm-up period of 30 min., the sphere is released from the selected height and three free-fall time measurements are made. Then a 5-by-5in. specimen is placed in the clamp and the sphere dropped through, giving an impeded-fall time reading which will be greater than the free-fall time. Ten separate specimens are measured, following which three more free-fall readings are taken to check the stability of the timer during the test. Each time value is then converted into height. The mean impeded-fall height is subtracted from the mean free-fall height and the difference multiplied by the mass of the projectile to obtain the impact strength of the film.

Using this equipment and method impact strengths for a wide variety of films have been measured. In obtaining these data (a typical example is tabulated in Table III), a 3-in. diameter specimen clamp and a 2½ in.-diameter, 1045-g. steel ball falling (This article continued on page 197

4. TEAR STRENGTH of single sheet of cellophane can be calculated with this instrument, adapted from Elmendorf tester to provide high sensitivity.



Design factors in blow-molded plastic bottles — II

CONSIDERATIONS IN THE CHOICE OF CLOSURES AND LINERS,

SPRAY FITTINGS AND SURFACE DECORATION DETAILS.

By J. H. Parliman*

In Part I of this two-part article, last month, the author pointed out the need for definitive information on design factors influencing the choice of a plastic bottle, discussed the various materials available and presented specific information on polyethylene bottles, including capacities and dimensions, neck design, threads, the phenomenon of collapse and the range of colors. He continues with a discussion of closures and liners.

The subject of closures and liners is very broad; only the most important points will be included in this discussion.

The greatest percentage of plastic bottles used in the past have been sealed using conventional threaded closures with customary closure liners as described below. Most of the closures have been selected from the extensive stock designs which are available.

Phenolic and urea have been the materials most often used, along with comparatively small quantities -of polystyrene and polyethylene.

Liner specifications have been dictated, as with glass containers, by the nature of the packaged product. Most common liners, probably, have been vinyl-coated pulpboard or cork, with a fair amount of homogeneous 0.040-to 0.075-in. polyethylene used.

The points discussed in the preceding section (Part I) on bottle neck and thread design would apply to threaded cap design.

A caution must be mentioned concerning the use of phenolic closures stripped from the mold and rolledmetal caps. A shallow thread is employed in both cases and thread dimensions vary more than usual. The phenolic caps referred to here are stripped from the mold by force without unscrewing. The better, but more expensive, grade of phenolic cap is made by a process in which the mold force plug rotates to unscrew the cap, prior to its removal from the mold cavity.

The full thread depth, giving optimum closure-thread-to-bottle-thread fit, is desired to avoid the possibility of caps which may be hand stripped from the bottles.

It should be noted that satisfactory polyethylene closures may be injection molded and stripped from the mold.

Friction-fit closures

The number of closures used which employ a friction fit rather than a thread is now in the millions. These friction-fit closures have two main advantages:

(1) Lower over-all package cost.
(2) Simplicity of applying and removing—both in the filling plant and in the customer's hands.

Many of the friction-fit caps have been designed to effect both a primary and a secondary seal. The primary seal is usually between the cap and plug, and the secondary seal between the cap and bottle or plug. A properly designed friction-fit cap package should give a seal just as efficient as that of a screw-on cap design.

Special consideration must be given to the engineering of friction-fit closure packages using long tip spray or dispenser plugs, such as are commonly used for nasal spray applications. Here the length of the plug protruding from the bottle neck is often considerably greater than the length of the plug in the bottle neck. This design allows leverage to be applied to the plug and consequent easier plug removal. In several commercial friction-fit cap designs, the caps have their sealing surface on the plug itself, not touching the bottle. Improper design may result in the plug being pulled from the bottle as the cap is removed. Some products act as plug lubricants, further aggravating the problem.

Below are suggestions relating to the plug-removal problem and to the general design of long-tip plug friction-fit closure packages. ("D" refers in all cases to the inside diameter of the bottle neck.)

1. Plug tip diameter should be 1/3 D or less-not more than 1/2 D.

2. Distance plug extends above top of bottle neck should not be more than 2% D.

3. Length of friction seal between plug tip and cap "well" (into which plug tip fits) should be no more than two plug tip diameters.

 The tip of the plug should be nearly cylindrical, with the proper conical angle to prevent leakage.

The cap "well" should fit the plug tip snugly, providing a friction seal.

6. The skirt of the cap should make a relatively easy fit on the plug or bottle, as the case may be, and should not limit up-and-down motion of the cap on the plug tip in any way.

7. Heat sealing of the plugs in the bottle neck can be carried out commercially and should be considered in some instances (8, 9)†.

Spray plugs and tubing

Fig. 5 illustrates the four components making up a complete spraybottle package: polyethylene flexible bottle, polyethylene tube, polyethylene spray plug and screw-on closure, the latter usually of urea or phenolic.

The subject of plug design in relation to the use of spray plugs with flexible bottles and tubing for atomizing or spray packages is broad; this discussion will be limited to an outline of some of the variables affecting the spray properties of plastic spraybottle packages.

Air space: A sizable air space above the liquid is required for spray-bottle applications. The exact amount necessary for a given end use depends on a number of factors, including the shape of the bottle, type of spray wanted and nature of the

^{*}Technical Service Manager, Plax Corp., Hartford, Conn.

[†] Numbers in parentheses identify References appended.

liquid. The minimum is usually 20% air space. Most body deodorants, household sprays and other non-critical end-use spray packages use about 25% air space. However, nasal-spray packages use a 33% to 67% air space when no droplets of liquid whatsoever, even on the first few sprays, can be tolerated. By far the most frequently encountered reason for spray packages giving a stream of droplets instead of a fine spray or mist is overfilling.

Tube 1D size: Tubing having IDs from 22 to 82 mils is most commonly used. Small-diameter tubing gives finer sprays and, conversely, large diameters give coarser sprays.

Liquid level: It requires more squeezing force to produce a spray as the bottle is used and the liquid level drops. This tends to be more noticeable with larger, taller bottles. Inasmuch as a proper spray is wanted for the last of the liquid as well as the first, this point should be checked.

Liquid viscosity: As the viscosity of the liquid is increased, the maximum force and pressure required to produce a suitable spray increases. Larger tube IDs permit the spraying of more viscous liquids. In one series of tests using a rectangular-shaped 2oz. bottle of 8-gm. weight with a plug having a 23-mil orifice diameter, it was found that with tube IDs of 52 mils or less, the sprayable viscosity range was limited from 1 to 10 centipoises. With tube IDs up to 82 mils. liquids having viscosities up to 60 centipoises could be satisfactorily sprayed with normal hand squeeze. For reference, water has a viscosity of 1 centipoise and olive oil 60 centipoises.

Recovery: The speed with which a bottle returns to its original shape after squeezing is called "recovery" and depends on the nature of the liquid, plug orifice size, bottle shape and tubing ID. Large orifices and larger tube IDs reduce the recovery time.

Surface tension of the liquid: Little study seems to have been made of this variable, but it is known to affect the spray properties of a package. In one instance when a bottle user changed the amount of wetting agent only slightly and thus changed the surface tension, the tube ID had to be changed from 32 to 42 mils to give a proper spray.

A rather wide range of stock polyethylene plugs is available, with skirt diameters ranging from 0.250 to 0.699 in., giving vertical, 45-deg.-angle or horizontal sprays.

Most of the plugs are injection molded from polyethylene, although polystyrene and methacrylate plugs have been used. Polyethylene is recommended because of its wide chemical resistance. Also its flexibility permits a better friction fit in the neck of the bottle and reduces stress on the bottle neck.

Most tubing now used is of the common cylindrical type. Plugs used with this tubing are specially constructed so as to allow air to be forced up alongside the tube, through passageways and out the plug orifice, as the bottle is squeezed.

It should be noted that all plugs so far molded are designed so the tubing must be inserted in the plug "well" up to a fixed stop molded in the plug. If the tube is not fully inserted, improper spray properties may result.

Labeling and decorating

In the matter of labeling and decorating polyethylene bottles, the designer now has considerable choice. The following methods are commercially used:

Silk-screen printing Hot-stamp printing

Offset printing

Raised or embossed lettering and designs

Paper, pressure-sensitive labels and decalcomanias.

It was only a matter of a year or two ago that labeling and decorating of polyethylene bottles was limited to hot-stamp printing and embossed lettering. However, at that time several concerns developed methods of treating the surface of the polyethylene so it would accept inks and adhesives. Silk screening has since then become a common and successful method of printing on polyethylene bottles. Offset printing and paper labeling, while commercially available and used, are comparatively new and unexploited.

The question frequently arises as to whether silk-screen or hot-stamp printing should be used. Actually, when all the facts are known and analyzed for a given package, there is usually little doubt remaining as to which printing method to use. The comparative advantages and disadvantages of silk-screen and hot-stamp printing on polyethylene bottles are summarized in Table I.

Boston round, taper round and square shapes are usually silk screened, while oval and oblong shapes are most often hot stamped.

The average hot-stamp die may cost five to 15 times as much as an ordinary silk screen. On the other hand, the life of a hot-stamp die is often a hundred times as long as that of an average silk screen.

All in all, the cost for silk-screen printing small quantities of bottles which require two-side printing (both front and back) is generally lower than that of hot-stamp printing.

The advent of successful offset printing gives new freedom of design in labeling and especially in decorating polyethylene bottles. However,

PRIWING COURTEST BONALD DESKEY ASSOCIATES.



5. COMPONENTS of the typical polyethylene squeeze-spray bottle are shown here in exploded view. Many variations of these fittings are possible, but these are the standard parts that are used on a Boston round bottle.

TABLE I-COMPARISON OF HOT-STAMP AND SILK-SCREEN PRINTING

		Advantage	Disadvantage	
Sil	Silk screen	Usually has better chemical resistance.	Requires bottle pretreatment. Requires heat drying after	
		Better adherence.	printing.	
		Usually better appearance due	Short screen life.	
	to embossed surface.	Many bottle shapes difficult to		
Inexpensive color matching po sible.		Inexpensive color matching pos- sible.	silk-screen print.	
		Low cost of screens.		
		Faster printing rate.		
		Can print with both sides of bottles as cheaply as one side (for round bottle).		
	Hot stamp	Requires no pretreatment.	High die costs (separate die	
riot stamp	riot stamp	Long die life.	for each printing "pass." Two	
		No heat drying.	dies required for two-side	
		Can print variety of bottles	printing.)	
		difficult to silk screen.	High tooling cost in set-up.	
			riight tooning cost in set-up.	

with the present state of the art, it is considerably more important to design the lettering and artwork with the limitations of the process in mind, when offset printing is to be used, than when dealing with the silk-screen or hot-stamp methods.

Offset printers are now able to obtain excellent ink adherence. The inks nicely withstand the tough pressure-sensitive-tape test which consists of applying tape across the inked area and then vigorously pulling off the tape; if the ink does not have good adherence to the bottle, it will come off with the tape.

In some cases offset printing may have less color intensity than silkscreen printing, especially in applications over broad inked areas. Therefore, in general, offset artwork should be designed to avoid broad area printing. Another limitation which may arise is dullness in certain of the colors. At the time of this writing, some of the inks are appreciably better than others in appearance. In view of the thinness of the ink film, chemical resistance may compare unfavorably to that of silk-screen inks in specific instances. Pretreatment is necessary for the offset method.

Offset printing has, however, a number of advantages over the other methods of polyethylene printing. Multicolor printing is easily accomplished—and at little more cost than for single colors. Halftones are possible, giving interesting effects. Larger surface areas, for a given bottle, may be printed than when using other methods. Furthermore, plates are low in cost. The final cost for offset printing polyethylene bottles is comparation.

tively low. With the above in mind, it is expected that offset printing will take on considerably more importance in the future.

When custom molds are used, all printing or paper labeling may be obviated by the use of embossed lettering and decoration.

The additional cost of embossed lettering and decoration is small, compared to the mold charges—a matter of a few hundred dollars extra. Once the molds have been made, there need be absolutely no further printing or labeling cost.

Like every other type of labeling, embossed lettering must be properly designed to realize the fullest benefit of the method.

Molds may be constructed for bottom embossing. Legibility is usually the important factor in bottom-plate lettering design.

The maximum depth of embossing used up to this time is about 1/16 in. Deeper embossing is possible in special cases. With few exceptions, 1/16-in. height is the smallest lettering that can be used. A height of 1/32-in. is possible on bottom panels, but small lettering such as this does not "fill in" well enough to be satisfactory for critical side-panel appearance. The limiting factor in height and depth is not the engraving of the molds, but rather the ability of the polyethylene to fill the engraving.

The color of the bottles is important when considering the use of embossed lettering. In general, dark colors show the embossing better than pastels or natural. Metallic colors seem to show embossing to the greatest advantage, due to highlight and shadow effects. Obviously, if natural or pastel colors are used, the effect of the product color must be considered.

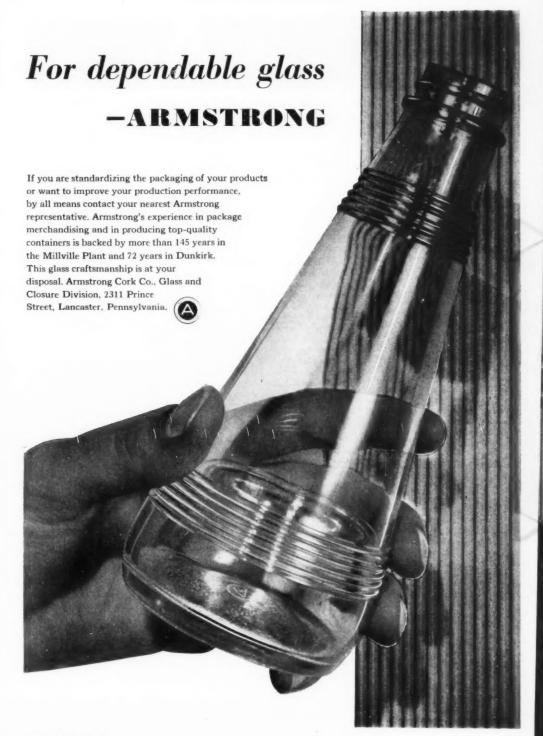
A wide variety of decorations is possible by the use of embossed ornamentive design such as stippling or texture. The same applies to the use of "figures" (as horse heads, etc.) and special designs often found in trademarks. Hobbing has been used for "figure" work, to reduce mold cost.

In this discussion, only raised lettering and decoration has been mentioned. Up to this time, only raised letters have been commercially used. However, it is felt that sunken (debossed) lettering might be used to advantage. The obvious reason for the almost 100% use of raised letters rather than the sunken letters lies in the easier mold construction. New mold-making techniques may have to be utilized to make debossed lettering and decoration practical.

Probably the least exploited method of labeling polyethylene bottles is the use of paper labels. The answer to this rather surprising fact lies in difficulties in getting glues and adhesives to stick to untreated polyethylene. Until surface pretreatment was developed, none of the adhesives would give good adherence to polyethylene, with the exception of the rubber-based products which were objectionable for a number of reasons. Little real work has been done to investigate the adherence of the various types of glues and adhesives to treated polyethylene surfaces.

It is known that many common glues stick firmly to the treated surfaces. As an example, the very common gummed labels, which must be moistened, will give a bond on treated polyethylene such that the label cracks or splits before the bond is broken. Herein lies the main difficulty encountered in the use of paper labels for polyethylene bottles; that although the labels may adhere to the bottle satisfactorily, when the bottle is squeezed the labels crack and split, giving a poor appearance. The polyethylene has considerably more stretch than the paper. However, it is obvious that the use of correct designs can, in many instances, solve or reduce the label-cracking disadvan-

Pressure-sensitive labels adhere to either treated or untreated surfaces and have been used in a number of (This article continued on page 190)





This consultation service on packaging subjects is at your command. Simply address your questions to Technical Editor, Modern Packaging, 575 Madison Ave., New York 22, N. Y. Your name or other identification will not appear with any published answer.

Greaseproof transparent film bag

QUESTION: We would like to package a caulking compound in a transparent film package. We have tried several film packages, but have found that the oils of the product leak through the seams. We have also found that polyethylene is not satisfactory because the oil appears to come through the film. Can you suggest a suitable transparent film for this use?

ANSWER: Apparently, you are considering putting this product in a transparent bag without a carton. Such a package will require a transparent film that is not only greaseproof, but a bag construction which is highly durable and has seams that are completely heat sealed. Your product is also very dense and heavy, which adds to the problem of providing a durable bag of good construction.

Without knowing the type of oil which is in your product, it would be impossible to be sure just what film would be most satisfactory. However, it is suggested that you try some of the heavier gauges of Pliofilm, saran and vinyl film. These three films are characterized by their oil resistance and high durability, and each of them can be fabricated into a bag by heat sealing to provide seams which will not allow the oil to seep through.

You can obtain bags made of these films and very easily determine if they meet your product and merchandising requirements. All of these films can be printed. A printed bag should be tested to see if the oil affects the adhesion of the ink.

Unit assembly for three boxes

QUESTION: We are packing a group of units in three small corrugated boxes which must be shipped together as an assembly. We have tried steel strapping to hold these small boxes together, but find that the strapping cuts into the boxes and that there is danger of damage to the

units, as well as loss of the boxes. Can you suggest a more satisfactory means of securing these boxes?

ANSWER: There are several possible methods of securing satisfactorily three small corrugated boxes into a single assembly for shipping and handling. One would be to overwrap the three boxes in several plies of a heavy kraft paper using adhesive to seal the overlap and ends. This overwrapping operation would be satisfactory, provided the three boxes form a smooth and rectangular assembly, but would not be satisfactory if the boxes were of different sizes. Probably the simplest answer is to use one of the newly developed reinforced flexible tapes. These tapes contain no metal and will not cut into the corners of the cases. They are also available in various grades and types and are very easy to apply. For details on some of these tapes see "Giant Jobs for Tapes," MODERN PACKAGING, July, 1951, p. 98.

Gluing coated labels

QUESTION: Our company produces a great many labels by both offset and letterpress methods. Nearly all of these labels are overglossed. This overgloss is not a varnish or lacquer, but is formulated so that it can be run on the press like an ink. Some of our customers have no trouble in gluing the overlap of these labels, while others complain that they cannot find a glue which will hold satisfactorily after it has dried out. We would like your help on this problem.

ANSWER: It is impossible to suggest a type of adhesive formulation which will satisfactorily secure the overlap of these glossy labels and operate on the various kinds of equipment in the plants of your customers. It is possible that the formulation of this overgloss would vary. Whether it was made up for offset or letterpress and also the amount of adhesive applied to the

paper would have a bearing on the ability of a given adhesive to hold. However, since you are applying this overgloss during the printing operation, it should not be too difficult for you to use a special form or cut roller that will produce finished labels having an edge area which is not coated. This dry or uncoated strip would permit the use of any of the conventional aqueous adhesives that the labeling machines are designed to handle. Such a dry strip on a label is necessary in many cases where heavy coatings of lacquers or resinous formulations are used and should not prove difficult in your production set-up.

Hardware in transparent bags

QUESTION: We propose to package several of our small hardware items in transparent bags. So far, we have tried bags made from cellophane and cellulose acetate, but excessive breakage results. Can you suggest a suitable material or bag construction?

ANSWER: Small hardware items are difficult to package in any material except plastic films which are formulated to be extremely tough and puncture resistant. Cellophane and cellulose acetate are not suitable for these products as they are easily perforated and torn, and otherwise do not have the required durability. Pliofilm or vinyl film of well-plasticized formulation should be entirely satisfactory for these products. Both of these films can be obtained in grades which are extremely tough and transparent. Small bags or envelopes fabricated of these materials and heat sealed are available. They are easy to print. Polyethylene would also be a good film for this purpose, although it is not quite as transparent as vinyl or Pliofilm. Its durability is such that there is no danger of torn or broken bags. However, it may be difficult to obtain polyethylene for this use during the present emergency.

We doubled our sales with this prestige package

-sealed with Cel-O-Seal

REG. U. S. PAT. OFF.

says Mr. A. J. Masi, Vice Pres. Rotella Beverages, Inc., Newark, N. J.

"Several years ago we designed a one-style bottle for all our beverage flavors," Mr. Masi reports. "Then we added 'Cel-O-Seal'—and got two big advantages. First, bright 'Cel-O-Seal' bands give our packages an added touch of prestige and distinction—make them real attention-getters at the point of sale.

"In addition, colorful 'Cel-O-Seal' bands readily identify the different flavors for the customers —both as they buy and while they use them. Since we've been using this package sealed with 'Cel-O-Seal,' our sales have doubled!"

Perhaps you can use distinctive "Cel-O-Seal" bands to improve your package or solve a special problem, cut costs and give your product extra sales-appeal. You can choose from over 20 colors and countless color combinations for extra smartness... get prominent display of your insignia, advertising themes, slogans, premium offers or any other sales message you wish your customers to read. And "Cel-O-Seal" cellulose bands give you an important opportunity to get these messages across on an area of your package that would otherwise be wasted space.

Find out more about "Cel-O-Seal" and the many sales advantages it can give your product. Write "Cel-O-Seal" Division, E. I. du Pont de Nemours & Co. (Inc.), 9521-A Nemours Bidg., Wilmington 98, Delaware. "Cel-O-Seal" bands are also sold by Armstrong Cork Co., Lancaster, Pa., and I. F. Schnier Co., San Francisco, Cal.

DU PONT "CEL-O-SEAL" BANDS

Rotella

BEVERAGES

ROTELLA BEVERAGES, INC. - NEWARK H.J

Rotella

BEVERAGE

OTELLA BEVERAGES INC. - NEWA



BETTER THINGS FOR BETTER LIVING
...THROUGH CHEMISTRY



Tupper Seal, air and liquid tight flexible covers fit, and are included in the sets of all Tupperware Canisters.



The Tupperware 50 oz. Canister is "standard equipped" with the Tupper Seal, air and liquid-tight flexible Pour All



The Tupper Seal, air and liquid-tight flexible Pour All cover is used on every Tupperware 20 oz, Canister,



The Tupper Seal, air and liquid tight, Pour All cover as a cover for 46 oz. cans; Tupperware Sauce Dishes and other containers of metal, glass or pottery. Foods easily dispensed without removing entire cover.



The Tupperware Wonder Bowls are usually fitted with Tupper Seal, air and liquidtight covers.



UPPER ! Seals

air and liquid-tight, flexible covers for Tupperware Tumblers, Canisters, Wonder Bowls, Cereal Bowls and many another container ofglass, metal and pottery, the contents of which it is desired to keep fresh and wholesome.





UPPER !



FORMAL NOTICE!

9th November, 1949

EXCLUSIVE!

U. S. Patent #2,487,400

The Tupper Corporation has attained a position of leadership in this industry by incurring great expense and expending painstaking effort in the development, design, ranufacture and exploitation of its many world-known products.

The Tupper Corporation further has anticipated the inevitable attacks to which leadership is subject and has taken measures provided by law to preserve the creative rights to its products, methods and design by patent protection both in the United States and abroad.

Tupper Seals for Tupperware shown in this advertisement are just a few of the forms covered in this manner and are specifically covered by U.S. Patent #2,487,400.

Only the Tupper Corporation, by U.S.Patent #2,487,400 has the right to make, use and vend container closures in connection with any and all types of containers throughout the United States and its territories as covered by the claims of the Patent.

Tupper Corporation will protect, according to law, the exclusive rights above granted

TUPPER CORPORATION



There's a Tupper Seal, air and liquid-tight flexible cover for Tupperware 2, 5, 8 and 12½ oz. Tumblers too, and these Tupper Seal, covers fit many other containers of metal, glass and crockery.

The Tupper Seal, air and liquid-tight flexible Por Top cover, specially designed as a dispensing cover for specified diameters of containers holding foods such as svrups, salad dressings, catsup.



The cover of the Tupperware Bread Server which serves as a bread tray also is designed to give similar results as Tupper Seal, air and liquid-tipft Flexible covers. Keeps contents fresh as no other such container.



When equipped with Tupper Seal, air and liquidtight. flexible covers, Tupperware Cereal Bowls serve many another purpose.



The Tupper Seal, air and liquid-tight flexible cover made for Tupperware 8 oz. Tumblers also fits and is sold with all Tupperware Funnels as a base when funnels are used as storage containers.

UPPER CORPORATION

Manufacturers of - CONSUMER, INDUSTRIAL, PACKAGING AND SCIENTIFIC PRODUCTS

FACTORIES: Farnumsville, Mass., and Cucro, Texas

New York Show Rooms 225 Fifth Ave.

ADDRESS ALL COMMUNICATIONS TO: Department A

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Hallmark of Superior Papers...



Never satisfied with present accomplishments, McLaurin-Jones strives unceasingly to offer business and industry even greater performance and value in printing, packaging and specialty papers. If it's made by McLaurin-Jones—it's a superior paper.

Among the wide range of McLaurin-Jones papers, famed for their excellence, are: Waretone, mirrorfinish coated paper for printing, label, box covering, cover and postcard work. Guaranteed Flat Gummed Papers for labels, seals and stickers. Old Tavern Gold and Platinum Metallics for labels, box work and printed pieces. Relyon Reproduction Paper for the printing trade. A full line of Sealing Tapes, Stays, and Gummed Cambrics for boxes, cartons, and containers.

LET US HELP YOU WITH YOUR PROBLEMS ON SPECIAL COATINGS AND GUMMINGS TECHNICAL, INDUSTRIAL, SPECIFICATION AND CHART PAPERS

MCLAURIN - JONES COMPANY

ROOKFIELD, MASSACHUSETTS

Officer, New York Chicago, Los Angels

Equipment and materials

PACKING OF GRANULAR PRODUCTS

in flat-bottom containers having either wide or narrow openings can be accomplished at high speed by the new Whiz-Packer automatic rotary and conveyor combination, according to its manufacturer, Frazier & Son, 338 Cortlandt St., Belleville, N.J. Suitable vibration is furnished in the rotary sec-



tion to permit products to settle fully and to provide fill at high speed. Dust accumulation is controlled at the same time by the seating relationship of the container adaptor spouts to the container openings. This adaptor relationship to container (rotary feeding head) allows a group of containers to be filled and vibrated at the same time and to settle fully before going on the outgoing side of the conveyor. Each model is custom built to fill specific needs of production-line space, container and product physical characteristics. The one illustrated is best suited for a one-container size or possibly a two-container are set-up where production requirements are great. All machines are equipped with scientifically designed agitation in the hopper appropriate to the product, automatic self alignment of product dial plates and container dial plates, a no-can-no-fill device and variable speed transmission with speed lacking feature.

A NEW LINE OF SHORT CASE SEALERS



for sealing corrugated shipping cartons is being offered by the A-B-C Packaging Machine Corp., Quincy, Ill. These "Junior" case sealers are considerably shorter and narrower than the former models and employ a complete new flight chain construction which is said vir-

tually to eliminate jamming of cartons. They are reported to be easily adjustable and will handle a wide range of carton sizes. Three models are available: Models L, M and O; illustrated above is the Model L.

AN IMPROVED SILICA GEL

packaging desiceant which under certain conditions is said to take up as much as 20% more moisture from the atmosphere than the older form has been announced by The Davison Chemical Corp., Baltimore 3, Md. The product, called "Protek-Sorb 121," will be used under the new military packaging desiceant specification MIL-D-3464, which rates desiceants according to their water-vapor pick-up. The material is hard and granular, and picks up moisture by adsorption. This means that water is condensed on the surfaces of the silica gel particles. It possesses millions of pores, which

offer a surface of approximately 50,000 sq. ft. per cu. in. of silica gel. The new product is said to provide safer storage under humid conditions and can be used in smaller quantities for comparable results.

WINE BOTTLES

in the standard four-fifths quart size for use by wineries and bottlers are now being manufactured by the Tygart Valley Glass Co., Washington, Penna. The company will continue making its full line of glass containers for food processors.

A NON-TEAR CASE-SEALING ADHESIVE

for sealing corrugated containers where re-use or easy opening is desired is being offered by Federal Adhesives Corp., 210-220 Wythe Ave., Brooklyn, N. Y. This new Non-Tear Case Seal glue is designed primarily for hand work, but can also be used on automatic case-sealing machines, according to the manufacturer.

A NEW SELF-SERVICE PACK FOR LINK SAUSAGE

introduced by Marathon Corp., Menasha, Wis., and called the "Look-Pak" affords a clear view of the product and, at the same time, presents brand identity in color on a band that locks over the top of the sausages. The package is said to offer



the packer fast, low-cost production and provide a protective, sanitary package that holds up under handling in the self-service meat case. The package consists of a die-cut paperboard that is scored so the ends, when drawn together and locked, form a rectangular collar over the top; the unit is then overwrapped with transparent material which may be any one of a number

of types, depending on the level of protection required. Printed on bright white paperboard, the Look-Pak brand indentification is claimed by the maker to have considerably higher visibility than designs printed on transparent film. An inexperienced operator can check-weigh and package four to five 1-lb. units per minute, according to the supplier, and overwrapping can be done manually at the rate of five or six per minute or automatically on any of a number of conventional wrapping machines. Either method, it is claimed, costs less than most conventional overwrapped packages. In addition to the brand name and trademark on the collar, additional copy may be printed on the back of the bottom panel. The package is easy to price mark and handle. Its shape, the design on the collar and product visibility combine to make it a good display builder.

AN IMPROVED BOW-MAKING MACHINE

known as the TyMatic Bow Spinner that is said to make ribbon bows and pompons at the rate of 150 an hour at a labor and cost saving of five to seven cents per bow has been announced by the Ribbon Division, Burlington Mills Corp., 350 Fifth Ave., New York. The machine will be leased rather than sold to department stores, manufacturers, etc., and Burlington has been named exclusive distributor by Tymatics, Inc., Dallas, Tex., creator and producer of the machine. The machine saves ribbon, since the yardage for any size of package can be controlled to the inch without any waste. A yardage chart governs the selective dialing for any size of bow. Improvements in the machine since its introduction last



Small Packages

Many of the better things of life — food, beauty, health, comfort — reach millions of people every year in attractive, convenient R. C. Fibre Cans.

Years of packaging experience, combined with constant study and research, enable R. C. Engineers to spot product characteristics quickly — adapt them to the most profitable and efficient packaging possible.

Whether your problem is one involving functional features (for easier filling, handling, displaying), or eye-appealing design for faster sales—R. C. provides you with a one-stop packaging service.



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INSECTICIDES

Will Syour Bottle Lose Its Identity

OW, ONE new Paisley Glue will keep the identity of your product, no matter how it is stored! Whether bottles are kept on icc, under water, or in dry mechanical refrigerators, you can avoid all danger of loose, torn or lost labels with GLASTAK... newest development of the Paisley Laboratories. Instead of using 2 or 3 different types of Adhesives to cover various storage conditions, this ONE remarkable new Glue is all you need. Here are some of its many advantages:

- Firmly holds foil, varnished or lacquered labels on hot, cold, wet or greasy containers.
- 2. Keeps labels in perfect condition, even when immersed in room temperature water!
- 3. Won't crystallize—labels don't pop off.
- 4. Improves production of all labelers . . clean working . . odorless.
- 5. No stringing, webbing, feathering or spitting.
 6. Labels wash off quickly and spells in basels.
- Labels wash off quickly and easily in bottle washer.
- 7. High speed . . up to 132 per minute!
- 8. Machine parts clean up quicker with plain water wash.
- 9. Economical in price and performance . . costs no more than ordinary bottle Glues.
- 10. GLASTAK is a laboratory controlled readyto-use Liquid Adhesive.

SEND FOR FREE Paisley Bottle Labeling Bulletin together with GLASTAK Laboratory Report. You can get Trial Shipment of 5 gals. GLASTAK at 55 gal. drum price. Our capable laboratory staff will gladly suggest the ONE best Adhesive for any labeling or gluing operation you describe.



PAISLEY PRODUCTS INCORPORATED MORNINGSTAR, NICOL, INC.

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Manufacturers of Glues · Pastes · Resin Adhesives · Cements and related Chemical Products

Equipment and materials

year have increased its effectiveness by 30%, it is reported. An electro-matic brake and other features have been added and over 100 distinct types of ribbon bows in various sizes, shapes and styles can be made. Spindles hold all widths of ribbon from No. 2 to No. 9; they will handle any fabric, paper, plastic or foil. Eight diameters of from 2 to 9 in. are possible. The machine automatically cuts off when 9, 18 or 27 petals are spun and an extra push of the button adds additional multiples of nine to any desired size. Employees can be trained to operate the machine in 15 minutes, it is said.

MINIATURE POLYETHYLENE DISPENSER-TUBES

having a capacity of 4 cc., or ½ oz., said to be the smallest yet molded, offer possibilities as refillable, pocket-sized, dropby-drop or "day's supply" packages for medicines, cosmetics



or other liquids. The tube, made by Plax Corp., Hartford, Conn., has an over-all length of approximately 2% in. and comes with a tapered tip that permits insertion into the nostrils. It may be had with a polyethylene closure which fits snugly over the threadless, tapered end. In dispensing liquids, the container is said not to drip because the flexibility of polyethylene creates a suction when

released after squeezing. Contents of the tube are visible at all times and the container may be carried safely in pocket, handbag or medicine kit. Capable of being filled with conventional equipment, the unit is supplied with its end sealed or open. A small ring on the closure, to attach the dispenser-tube to an object, is also optional.

METALIZED POLYSTYRENE SHEET AND FILM

in a complete range of colors and finishes has been announced by Coating Products, 136 W. 21st St., New York. Suitable for gift packaging and merchandising displays, the material is available in gauges of 0.003, 0.005, 0.0065, 0.0075 and 0.010 in, in 20-in, and in rolls 500 to 1,000 ft. on 3-in. I. D. cores. Rolls can be slit or sheeted to specific requirements.

A NEW POCKET-SIZED STAPLING GUN

said to be five times as powerful as the conventional one-hand industrial tacker has been developed by The Heller Co.,



2129-H Superior Ave., Cleveland, Ohio. This heavy-duty, streamlined, sturdy tool is said to be the first one-hand stapler capable of fastening metal or fibre shipping tags to export boxes, saving time and manpower for the shipper. The heavy-duty staples are five times normal size and

grip wood securely with a "super-clinch" locking feature. The stapling gun may also be used for stapling shipping-list protectors, linings of export boxes, fibre packing list covers, railroad box-car linings, car identification tags and many other operations where speed and secure fastening are needed.

A NEW PLASTICIZER

designed for the modern synthetic resins such as polyvinyl acetate, polyvinyl alcohol, nylon, cellulose acetate, nitrocellulose, etc., which is said to be non-volatile, non-migratory and insoluble in hydrocarbons, vegetable oils and fatty acids has been introduced by the Cambridge Industries Co., 101



Slashes Time, Labor and Material Costs

Here's a carton closing machine that pays for itself in short order! It's versatile and efficient—and features quick adjustability on the job.

On one recent installation, this new Peters Model CCY Closing Machine cut operator time by 1/3, eliminated a wrapping machine and also eliminated the need for critical cellophane. An automatic, fast-sealing-gluing unit helped make these savings possible.

Demand for this new Peters machine is accelerating rapidly. Be sure to learn more about it—and place your



The versatile, adjustable Model CCY Peters Carton Closing Machine has many applications. For complete information, write for descriptive folder, or send sample of your carton. Specific recommendations will follow promptly.

Peters Machinery CO.

4712 Ravenswood Avenue . Chicago 40, Illinois



Equipment and materials

Potter St., Cambridge, Mass. Packagers interested in the new Resoflex R-296 plasticizer may obtain samples and technical literature on request to the supplier.

A NEW AUTOMATIC PACKAGE-IMPRINTING MACHINE

designed to fill the need for a compact, friction-powered production-line attachment that will produce spot-registered imprints on small-sized cartons has been introduced by Adolph Gottscho, Inc., Hillside 5, N. J. It is also suitable for im-



printing code dates, weights, sizes, flavors, etc., on cans, canisters and borles. Sturdily constructed to perform efficiently over long periods of time on modern high-speed production lines, the Rolocoder 401 imprints legends containing up to four lines of copy (occupying a maximum depth of 1 in. and a maximum length of 5 in.) on the top or side of cartons

as they pass through a cartoner or sealer, or along a chain or belt conveyor. It is said to make a single accurately located imprint in any designated spot on cartons whose imprint side measures between 1½ and 6½ in. in the dimension parallel to the direction of package travel. The machine features a new "Metalok" type holder that is reported to lock the interchangeable rubber type securely in place so that it cannot slip out of position during the imprinting. Normally the machine is pre-set at the factory for specific-sized cartons, but when desired may be obtained with interchangeable cams that permit modification of the machine action at will. It is also furnished with appropriate mounts for installation in either a vertical or horizontal position to imprint from top or side of the line.

SEVEN FLUORESCENT SILK-SCREEN COLORS

chartreuse, orange-yellow, orange, green, red, cerise and orange-red—are now being marketed nationally by the Radiant Color Co., 830 Isabella St., Oakland, Calif., makers of Velva-Glo fluorescent papers, board, etc. These Velva-Glo silk-screen colors are recommended for window displays, labels, box wraps, price tags, inserts, bottle collars, etc., where attention value is important. All seven colors are available in half pints, pints, quarts and gallons. They can be bought and used without license arrangements or payment of license fees.

A NEW AUTOMATIC PALLET-LOADER ARRANGEMENT for intermediate storage of pallets awaiting removal after being loaded makes it possible to accumulate up to six loaded pallets while waiting for a fork truck to return from the stacking area, according to The Lamson Corp., Syracuse, N.Y., manufacturer of the equipment. Without this arrangement, it is said, the truck might not return in time to remove loaded pallets as they are discharged and automatic loading operations would be delayed. Loaded pallets are pushed off the pallet loader's discharge conveyor and onto a second conveyor at right angles to the discharge. Automatic tripping mechanisms operate a ram which pushes the loaded pallet onto the right-angle storage conveyor. The storage arrangement is particularly useful when alternate pallets are loaded with different commodities. Trucks may now take these commodities to stacking zones at various distances from the loader without interrupting the schedule of either the loader or the

truck. The temporary storage arrangement not only accumulates pallets which are loaded while the truck is on a long haul, but also supplies a backlog from which the truck can load when returning from a short haul.

METAL CONTAINERS WITH MOSAIC MOTIF,



aptly named "Mosaic," are being offered to the trade as a re-use package by the Fancy Container Division of the I. D. Company, 150 Spring St., New York 12, N.Y. The container is colorful and particularly appealing because the elements of the intricate design are embossed, presenting the illusion of each piece being in-

laid. Colors are vivid and bright. The box makes a distinctive container for cookies, candies or nuts and it can be re-used as a decorative piece or as a powder container. Inside dimensions are 5% in. wide by 3 in. deep.

FLUORESCENT-COATED PAPERS

are now being manufactured and distributed by Crocker, Burbank Papers, Inc., Fitchburg, Mass., under licensing arrangements by Switzer Boss., Inc., to be sold under the Switzer Day-Glo trademark. Licensing arrangements have also been completed by the Dennison Mfg. Co. of Framingham, Mass., with Crocker, Burbank Papers and Switzer Bros. for distribution of the Day-Glo papers.

Crocker, Burbank announces that these papers will be manufactured in a wide range of sizes and weights in five daylight fluorescent colors: Neon Red, Fire Orange, Arc Yellow, Saturn Yellow and Signal Green. The new stock, according to Crocker, Burbank, will offer good printing qualities, lightfastness and color brilliance. It is said that the Crocker Day-Glo coated paper will not scuff or mark off, that it can be folded with or across the grain and that it is suited for all types of high-speed printing and paper converter applications. The stock will be sold by paper merchants to competent printers and other paper users licensed on a non-exclusive basis.

Dennison Mfg. Co. believes that the combination of Day-Glo coated papers with the Dennison Non-Blocking gummings will result in increased versatility for these papers. They can be printed by regular methods with ordinary printing inks. Dennison gummed Day-Glo will be available in label-weight papers with strong Non-Blocking gumming in 20 by 25 in. sheets or in rolls cutting from 50-in. jumbo rolls. Distribution will be handled through paper merchants under licensing agreements.

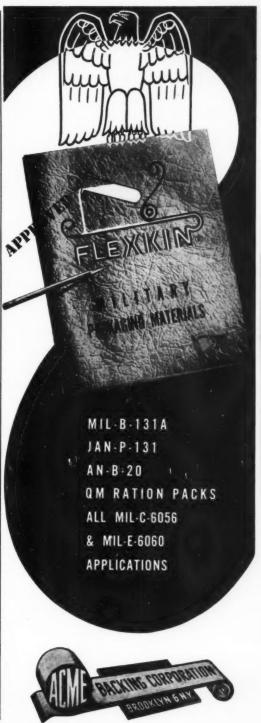
A NEW CYLINDRICAL CARBOY

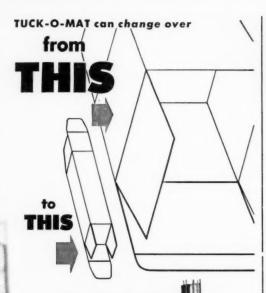
designed especially for export use has been introduced by Seymour & Peck Co., Rahway, N.J., a division of The Greif Bros. Cooperage Corp. Under development for the past three years,



the carboy features a specially constructed plywood drum which completely encloses the bottle. It comes in 5- and 6-%-gal. sizes and has been approved by the ICC for hazardous liquids, according to the maker. The new carboy is reported to reduce cubage displacement on shipboard up to 30% and, because it is up to 50% lighter than ordinary types, saves shipping costs as well as time handling. The plywood "jacket" is

dling. The plywood "jacket" is strongly reinforced at all points of stress. A specially designed stapler is available for closing the cover with heavy metal staples. An inner plywood spring jacket affords a floating mounting for the bottle, which eliminates the need for hazardous foreign filler materials used for packing around conventional carboys. The bottles have the latest type of vented, screw-cap closures.





You get a plus value in TUCK-O-MAT. Converts easily and quickly from end sizes of %"x %"to 4" x 5"; lengths 1¼" to 12".

- SPEED—30 to 75 per minute.
 PORTABLE—Easily rolled to
- any dept.
 CHANGE OVER parts are simple, inexpensive.

 BALL BEARINGS used
- throughout.

MODEL 50. 24" x 48" floor space; wt. 350 lbs.; mounted on rubber wheels. Patents pending.





"CONVEY-O-MAT" Model 50, plus conveyor



TUCK-O-MAT starts paying for itself when you turn on the switch. Faster set-ups, lower labor costs! Write for brochure. Include samples of your full line of cartons.

2431 Dallas Street, Los Angeles 31, California

Dist. by New Jersey Machine Corp., Hoboken, Cincinnati, Chicago, Los Angeles



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ILLINOIS	Blake, Moffitt & Towns Portland
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Abana Products	Hubbs & Howe Co
Knox & Schneider Paper CoChicago S. V. Cain, Inc	Hubbs & Hawe Ce. Erie Merris Paper Ce. Johnstown J. N. L. Smythe Ce. Philadelphia D. L. Ward Ce. Philadelphia The Chatfield & Woods
INDIANA	D. L. Ward CoPhiladelphia
	The Chatfield & Woods
The Millcraft Paper CoFt. Wayne Crescent Paper CoIndianapolis Schwarz Paper CoSouth Bend	Co. of PaPittsburgh Williamsport Paper CoWilliamsport
IOWA	RHODE ISLAND
Carpenter Paper Co Des Moines,	Carter, Rice & Co. CorpProvidence SOUTH CAROLINA
KANSAS Sioux City	Dillard Paper Co., Inc Greenville
Carpenter Paper CoTopeka Graham Paper CoWichita	TENNESSEE
KENTUCKY	Volunteer DivisionKnoxville
Graham Paper CoLouisville	Graham Paper Co Memphis,
LOUISIANA	Wurzburg Bros Memphis, Nashville Clements Paper Co Nashville
Graham Paper CoNew Orleans MAINE	
Carter Rice & Co. Corp Augusta	TEXAS Carpenter Paper CoDallas,
MARYLAND	El Paso, Fort Worth, Son Antonio
Hubbs & Corning CoBaltimore The Whitaker Paper CoBaltimore	Graham Paper Ce
MASSACHUSETTS	UTAH
Carter Rice & Co. CorpBoston H. J. Dawd Co., IncCambridge Charles A. Esty Paper	Carpenter Paper Co. Ogden, Salt Lake City
Charles A. Esty Paper	Zellerbach Paper Co. Salt Lake City
Bulkley, Dunton & Co. Inc.,. Springfield	VIRGINIA
MICHIGAN	Dillard Paper CoBristol, Roanoke Hamilton Paper CoRichmond
Cortright Paper CoBattle Creek The Whitaker Paper CoDetroit Boocher, Peck & LewisFlint Graham Paper CoGrand Rapids Crown Paper & Bag CoJackson	
Boecher, Peck & Lewis	WASHINGTON Blake, Moffitt & Towns Seattle,
Graham Paper Co Grand Rapids	Blake, Moffitt & Towns Seattle, Spokane, Tacoma Zellerbach Paper Co.
	Seattle, Spokane
Company	Spokane Paper & Stationery CompanySpokane
Reid Paper Co	WEST VIRGINIA
MINNESOTA	Morris Paper Co. of W.Va Clarksburg
Graham Paper Co Minneapolis Carpenter Paper Co Minneapolis,	WISCONSIN
MISSOURI St. Paul	Wisconsin Paper & Products CoMilwaukee
Carpenter Paper Co Kansas City Graham Paper Co N. Kansas City,	Products Co
Graham Paper CoN. Kansas City, St. Louis	CANADA
Smith-Scharff Paper Co St. Louis	F. F. Barber Machinery
NEBRASKA	F. F. Barber Machinery Company, LtdToronto, Ontario Mid-West Paper Ltd.
Carpenter Paper Co Grand Island, Lincoln, Omaha	HAWAII Winnipeg, Manitoba
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Kimpak" Float Packaging



Cuts shipping costs— reduces damage in transit!

How many millions of dollars manufacturing concerns lose each year because of product damage in shipment could never be accurately estimated. But today, any company is able to count its savings after a change from outmoded, inferior packaging materials. In countless cases the change has been to KIMPAK* Float Packaging—now recognized as one of the world's most effective packaging methods at lowest true cost.

The effectiveness of KIMPAK protective cushioning is well demonstrated by the Aero Mayflower Transit Company—coast-to-coast movers who have compiled a unique record of damage-free shipments since their adoption of a modern, up-to-date packaging operation. Because Aero Mayflower transports the wide variety of furniture items which are found in the home, their use of KIMPAK indicates the

versatility of this superior cushioning material. KIMPAK is soft, Elean, featherlight—as easy to apply as wrapping paper. Available in rolls, sheets or pads, it can be "tailored" to almost any size, shape or density. KIMPAK protects against shock. scratching and press-marking—will absorb up to 16 times its own weight in moisture. No wonder Aero Mayflower can point with pride to such a fine shipping record. And no wonder so many manufacturers are finding a satisfactory answer to their packaging problem—with KIMPAK protective cushioning.

Take a tip from a company that has packed and shipped your kind of product under the most difficult conditions—with complete safety. Investigate KIMPAK Float Packaging at your earliest opportunity. For complete information, write to Kimberly-Clark Corp., Neenah, Wis.

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REG. U.S. PAT. OFF. 4 PROPERIOR COUNTRIES



PROTECTIVE CUSHIONING



Metal Statue is well padded with KIMPAK protective cushioning.



Glass Picture Frame in wood crate with edges cushioned by KIMPAK.



Mahogany Table. Top cushioned with KIMPAK to protect filigree.

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T, M. REG. U. S. PAT. DEF.

NOVEMBER 1951

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Plants and people

The formation of a new operating organization for the Ecusta Paper Corp., a subsidiary of Olin Industries, Inc., has been announced along with the appointment of executive personnel to administer the company's two new operating divisions. Norman H. Collisson, Ecusta vice president, has been appointed general manager of the Olin Cellophane Division. Lawrence F. Dixon, executive of Ecusta and its affiliates, has been named general manager of the Ecusta Paper Division. Olin Cellophane Division executives named by Mr. Collisson are: Milton L. Herzog, production manager; James L. Spencer, sales manager; E. Hartshorne, research and development manager; E. L. Lynn, quality control manager. Executives of the Ecusta Paper Division appointed by Mr. Dixon are: Lee M. Bauer, production manager; R. E. Matthews, sales manager; Milton O. Schur, research and development manager; R. L. Hooper, quality control manager. J. K. Pepper has been assigned to assist Mr. Hanes and R. W. Lea, Olin Industries' director, in organization matters.

William Heller, Sr., chairman of the board of directors of Milprint, Inc., celebrated his 50th anniversary with the firm

> last month. The late M. T. Heller started the business in 1899 and William Heller joined the company three years later in October, 1901. Through his efforts Milprint grew from a small job printing shop to become one of the largest



packaging materials and printing supply houses, with a nationwide network of plants, mills, design studios and sales office. The year of Mr. Heller's 50th anniversary also marks the completion of Milprint's giant new Milwaukee Works, combining under one roof on a 22-acre site the firm's central offices and

Milwaukee production facilities. The company's nationwide production facilities occupy almost a million square feet in floor space. Milprint is credited with developing methods for printing on glassine, foil and cellophane.

McLaurin-Jones Co., Brookfield, Mass., suppliers of gums and coatings, has acquired a 10-acre site in Homer, La., on which building construction will start immediately. This Southern unit will contain the company's first manufacturing unit for a new line of polyethylenecoated products, in addition to its complete line of gummed tapes. Construction will allow for the installation of equipment to produce both flat gummed and coated papers in the future.

Ball Bros. Co., Muncie, Ind., has announced the creation of a new Consumer Product Sales Division designed to broaden the range of the firm's consumer goods. William E. Palmer has been appointed manager of marketing to direct the new sales organization which will handle sale of the Ball home-canning supplies and the development of consumer products to be sold on a yeararound basis. Mr. Palmer recently resigned as director of merchandising for Benton & Bowles.

The Turner White Metal Co., New Brunswick, N. J., has completed an extensive program of modernizing its production facilities to include the production of aluminum tubes. This supplements the company's present production lines for the manufacture of tin, lead and tin-coated lead tubes.

Gage Olcott, for seven years supervisor of plastics sales in the New York office of The Dow Chemical Co., has been transferred to the company's plastics department at Midland, Mich. Mr. Olcott will act as liaison between plastics merchandising section and Dow salesmen throughout the country to keep them abreast of the firm's extensive merchandising program on Styron polystyrene products. E. R. Nepkie, former coatings salesman in the Cleveland office, succeeds Mr. Olcott in New York.

Bestpak, Inc., Boston, Mass., announces that J. Philip Pancoast has joined the company as manager of its New York division. Bestpak manufactures singlefaced corrugated and paper products for protective cushioning and shelf packaging. Mr. Pancoast will work with the food, pharmaceutical and toiletries indus-

Richard Hall has been appointed sales representative with headquarters at Cleveland, Ohio, by Plax Corp., Hartford, Conn., manufacturers of squeezable bottles. Mr. Hall was formerly with the Chemical Dept. of General Electric.

Edward B. Beeks has joined the Chicago branch sales office of American Coating Mills, folding carton division of Owens-Illinois Glass Co., Toledo, Ohio.

James R. Turnbull, general sales manager of Monsanto Chemical Co.'s Plastics Division, Springfield, Mass., has been given a temporary leave of absence to work on special polymer marketing problems for the company's executive committee. During Mr. Turnbull's absence, Charles Lichtenberg, assistant general sales manager, will be responsible for the division's sales activities. Two new assistant general sales managers have been named: Edwin L. Hobson, thermoplastic molding materials sales manager, and R. C. Evans, sales manager of Vuepak and sheets. David Guarnaccia, assistant sales manager of thermoplastic molding materials, will succeed Mr. Hobson and Edwin V. Hellyar has been named assistant sales manager of

Container Corp. of America has announced that the Sefton Fibre Can Co., a wholly owned subsidiary with headquarters in St. Louis, Mo., has opened its new plant in Piqua, Ohio. The new building has 55,000 sq. ft. of floor space. Although planned as a manufacturing unit to augment the company's output of fibre cans for regular commercial use, the plant's initial production will be on Government orders. Carl Wenstrup, formerly in charge of Sefton's Cincinnati office, is general manager of the new plant.

William G. Polley, southern area special representative for Acme Steel Co., has been appointed district sales manager at Atlanta, Ga. Replacing Mr. Polley in the











Skates go to the rink (and from the store) in this H & D corrugated "luggage" box

It doesn't take an ice skater long to see that this is more than "just a box"—it's also a handy carrier for his skates. The result? Easier sales for clerks who sell Spalding skates packed in this bright, linen-finish corrugated box. Styled like a smart piece of airplane luggage, this H & D box helps provide the "plus" that turns shoppers into buyers.

The H & D Package Laboratory is ready to add a sales "plus" to your product, too, by creating a package with after-sales use—or by providing better display . . . cutting wrapping costs . . . giving extra protection . . . increasing multiple or tie-in sales. For free booklet, "Pack to Attract," write Hinde & Dauch, 5105 Decatur St., Sandusky, Ohio.





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Paper at home and afield

Ready Mixes for Pie Crusts, Biscuits, and Mussins assure kitchen triumphs to the greenest bride. A few years ago these clever products didn't exist nor did the kind of packages that made them possible-many developed by Rhinelander.



Jet planes and tanks . . . machine guns and all the vast paraphernalia of defense require a million and one replacement parts which must be protected from rust and corrosion until used. Rhinelander's special paper for ordnance wrapping con-tributes mightily to the solving of this important problem.



Fine meat off the range poses dozens of tricky packaging worries. For years the Packers have relied on the special properties of Rhinelander G and G* Task Paper to help solve the meat industry's many problems of protection and mer-chandising.

glassine and greaseproof



IN THE LAND O' LAKES . RHINELANDER, WISCONSIN

Plants and people

southern area is Charles R. Lammers, who has been transferred from Buffalo, N. Y.

George A. Mohlman, recognized as one of the leaders in the packaging field, has retired from active service with the Package Machinery Co., but will remain



as newly elected chairman emeritus of the board of directors. Mr. Mohlman joined the New York sales force of the Package Machinery Co. in 1908. In 1926 he was elected second vice president and a year later, vice president. He succeeded to

the presidency of his firm in 1942. From 1948 to Oct. 1 of this year, he was chairman of the board. During the period of years in which he was actively associated with the company's steady growth, annual sales increased from 3/4 of a million to eight million dollars and employment increased about 300%.

Virtual completion of a current expansion program that will nearly double the annual container manufacturing capacity at American Can Co.'s St. Paul, Minn., plant has been announced. Several new production lines, each capable of turning out up to 400 cans per minute, have been installed. Although Canco's St. Paul plant in the past has manufactured containers mainly for ham, lard, cream and eggs, the new expansion will enable it to produce millions of vegetable and key-opening meat cans annually, it is stated.

Extruders, Inc., West Coast manufacturer of plastic films and tubing, has moved to a new, larger factory at 3232 W. El Segundo Blvd., Hawthorne, Calif.

Harvey C. Heagen has been named sales manager of the Equitable Paper Bag Co., Inc., Long Island City, N. Y., manufacturers of specialty paper bags, heavy-duty sacks and envelopes.

Completion of an extensive plant expansion and modernization program at the Cincinnati manufacturing plant of the United States Printing & Lithograph Co. has been announced. The program included the construction of a large onestory addition to the present building, installation of new high-speed multicolor presses and other equipment, and the remodeling of a one-story building into a finished-goods warehouse. The new facilities have substantially increased the operating efficiency and production capacity

Here's Why

MORE TUBES ARE FILLED ON COLTON MACHINES THAN ON ANY OTHER ...

Brilliant engineering in Colton's new equipment has sent it rocketing to new heights of leadership in the tube-filling field—where Colton has always led.

The new units provide exact accuracy of measure, continuous high speed, quick cleaning, quick adjustment to new sizes and change-over to cans, tubes or jars, complete versatility embracing liquids, semi-liquids, pastes from water-thin to thick and ropey.

Our new condensed catalog of Packaging Equipment presents sixteen costcutting items. We suggest you write for it.

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COLTON AUTOMATIC TUBE FILLER AND CLOSES

World's most widely used tube filling machine. Handles pastes, creams, liquids, powders. Single—55 tubes a minute, sizes up to 1½° x 7½°; Twin—85 tubes a minute, sizes up to 3½° x 7½°. Automatic work cycle. Produces Colton Clipless Closure. Standard or stainless steel contact parts. Quick change-over. Tube cleaner, cap tightener, stirring device, heated water jacketed hopper, no-tube-no-fill device, all available at extra cost.

COLTON WORM-TYPE

No. 140
Fills tubes, jars, cans, bottles.
Max., 50 tubes a minute;
sizes up to 1½° x 8°.
Especially engineered for
pastes. Surring device and
heating jacket extra.

COLTON TUBE FILLER

Standard or Stainless Steel

No. 120
(Mand Operated)
Fills tubes, jars, cans, bottles.
Max., 30 tubes a minute; sizes up to 1½° x 7½° by pressure or by gravity feed.
Standard or stainless steel contact parts.



COLTON GEAR-TYP

No. 150 (For Posts and Croom

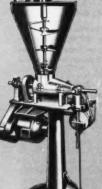
Fills tubes, rs, cans, bottes.
Max., 50 tubes a minute; size up to 1½"x 8". tising device and heating jaket extra. Very uccessful with heavy mater ils.

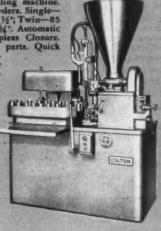


No. 430

Produces the dtuble fold only, crimped. Max., 40 tubes a minute; sizes up to 1½° x 7°. Widely used where fully automatic equipment is not required.







PACKER liquid filling machines

One of these units is sure to answer your liquid filling requirements

Widely known for the fast, accurate way they fill bottles, cans and plastic containers of various sizes, Packer Filling Machines successfully handle thin, foamy or viscous liquids, hot or cold.

Typical Firms Using Packer Fillers in the Many Industries Packer Services:

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CHEMICALS

Northam Warren Corp.—"Cutex" nail polish & remover The Dow Chemical Co.—filling insecticides

OILS

Hudson Motor Car Co.—filling hydraulic oil Socony-Vacuum Oil Co.—lubricating oils

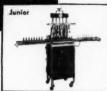
PAINTS & THINNERS

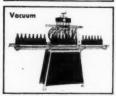
General Electric Co.—filling paints & lacquers E. I. Dupont de Nemours & Co.—thinners

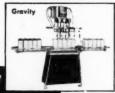
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The Proctor & Gamble Co.—filting edible oil S & W Fine Foods, Inc.—filling maple syrup

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Apples

—and scores of other perishable items!

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- Fracture-Proof
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Don't confuse Howard-Seal with any other film. Howard-Seal is controlled as to uniformity of thickness, size, and sealability.

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Photo of Apples packaged in HOWARD-SEAL Plastic Bag

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Plants and people

of the Cincinnati plant, according to W. H. Walters, president of the company.



Mr. Hoffman

Louis J. Hoffmann, formerly business manager of the St. Louis Star-Times, has been appointed vice president of Central States Paper & Bag Co., St. Louis, Mo. His duties will include direction of personnel, general safety programs, plant protec-

tion, employee welfare plans and assistance in sales training.

Construction of a new multimillion dollar containerboard mill at Rome, Ga., has been announced by Al H. Mahrt, president of the Rome Kraft Co., a newly organized corporation at Rome, Ga. The new company is owned by The Mead Corp., Dayton, Ohio, and the Inland Container Corp., Indianapolis, Ind., owners of the Macon Kraft Co. of Macon, Ga. The new mill will make kraft container-board for corrugated shipping containers.

Dr. Harold L. Maxwell, supervisor of general consultants, E. I. du Pont de Nemours & Co., Inc., has been elected a vice president of the American Society for Testing Materials, to fill a vacancy that existed in the board of directors. He will serve as a vice president through the society's 50th anniversary meeting to be held in New York in June of next year.

Jack A. Wittstein has opened offices as a direct mill representative for three fibreboard manufacturers. His firm will supply corrugated and solid fibre containers and a complete line of paperboard specialties and displays throughout southern New England. Address of the new firm is P. O. Box 1348, New Haven 5, Conn. Offices are at 56 Church St., in that city.

Dr. Howard L. Stier, professor of agricultural marketing at the University of Maryland, has joined the staff of the National Canners Assn. as director of the Division of Statistics.

The J. W. Wilson Glass Co., Inc., has opened an additional warehouse at 170 Blanchard St., Newark, N. J. The company's other warehouse and its executive offices are at 55 N. Fourth St., Brooklyn.

The Chicago branch offices of The Howe Scale Co., Rutland, Vt., are now located at 1915 N. Harlem Ave. Curtis B. Hoffman is Chicago branch manager of the company. New manager of the Los An-



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The answer to your problems involving the application of fluids. Evenflo engraved rolls apply your ink or coatings in the correct amount, continuously and automatically. No time-consuming adjust-ments are required and materials are conserved because of fewer rejects due to faulty application. Evenflo Engraved Rolls can improve your presswork and step up the efficiency of your coating operations by assuring uniform coverage.







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The new Evenflo Data Sheet is a complete guide to the use of engraved applicator rolls. Fully illustrated and includes tables of sizes. Aniline printers, paper coaters and specialty makers will find it helpful. Call or write Pamarco for your Evenfio Guide, today!

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NOVEMBER 1951



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Fasten your product to a display board

Box comes flat . . . two edges pasted

You set two edges quickly and insert display

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Zumbiel can design this sales compelling type of box with many variations in color and dimensions, unequal framing, and acetate cover to fit your product, or any part of your product you wish to emphasize. Such boxes bring more than they cost, lend distinction, and promote purchases for gift purposes. Boxes based on any of the styles listed

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Packaging Glues

military and other applications

No. of Specification Date of Latest Issue	TITLE	MATERIALS TO COMPLY		
JAN-P-101 1 March 1945	Packaging and Packing for Overseas Shipment. Adhe- sive, Water-resistant, for Sealing Fibreboard Boxes	Type I or II, Grade A or B: CASCOLA CS-217-M		
JAN-P-140 Packaging and Packing for Overseas Shipment. Adhesives, Water-resistant, Case-Liner		Type I or II, Grade A and B: CASCOLA WP-311		
UM-186 3 August 1945	Medicinal Products and Clinical Laboratory Re- agents; General Specifica- tion for Containers (Pack- aging and Packing)	For gluing labels to Type I (glass) containers: LP-85		

Other glues to meet JAN-P-117, JAN-P-120, JAN-P-125, JAN-C-1042, JAN-D-111, JAN-D-232, JAN-P-108, JAN-A-136 and many other specifications

• Send for your free copy of Casco Service Bulletin 82, "Government Procurement of Wood, Plastics and Paper Products." Lists Purchasing Offices, includes complete Specification Chart, tells how to estimate glue costs. It's part of Borden's Glue Service. Address: Dept.MP111, The Borden Company, Chemical Division, 350 Madison Avenue, New York 17, N. Y.

Borden's CHEMICAL DIVISION





Plants and people

geles branch is Lierd E. Grant. Mr. Grant will also continue as manager of the San Francisco branch, where William J. Tucey has been named assistant branch manager. Other appointments announced by the Howe company are O. B. Collins, manager of the Atlanta branch, and Jack H. Brewer, manager at Minneapolis.

Union Bag & Paper Corp. has announced the retirement of True M. Avery, vice



president and manager of the company's machinery design department. Mr. Avery joined Union Bag in 1907. He was made manager of factories in 1930 and vice president in 1936. Mr. Avery has been granted several patents relating to paper-con-

verting machinery. One of his most important developments was the Photocell Compensator, which enables converting preprinted paper in perfect register and at high speeds on the bag machine.

Bern A. Ormsby has succeeded the late Glenn O. Sensiba as western general manager of the Sigmund Ullman Co., Div. of Sun Chemical Corp.

Chippewa Paper Products Co., Inc., Chicago, has announced the appointment of Loyal Edward Jansen as Southeastern representative.

American Type Founders has announced the removal of its Klingrose Rotogravure Division to 2 South St., Mt. Vernon, N. Y., consolidating ATF's web press manufacturing facilities in a single location. Sales offices are at 19 Rector St., New York.

Morris S. Rosenthal, president of Stein, Hall & Co., Inc., was a member of the United States delegation to the U. N. Economic Commission for Asia and Far East Regional Conference on Trade Promotion, held at Singapore last month.

Walter McCarthy of Birmingham, Mich., has been appointed assistant district sales manager of the Detroit office of the Wood Conversion Co., St. Paul, Minn., manufacturers of cushioning and insulating materials, D. E. Dahle is district manager. P. C. Whelan has been named industrial products salesman in Buffalo, N. Y. A. L. Spafford is now industrial products salesman in Detroit.

Wright Machinery Co., manufacturer of packaging machinery, Durham, N. C., has aunounced the appointment of Edwin F.









package your liquid products automatically at lower cost!

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lawer operating costs

maintenance costs

Leading, nationally known packagers have installed Transwrap liquid feed machines—for their
(1) simplicity, (2) three-way
economy, and (3) versatility.
Their records prove high labor savings-one machine equals the output of fifteen to eighteen hand operators; plus additional savings on eliminating the purchase of ready-made bags. "Downtime" is practically eliminated; repairs are negligible.

Transwrap liquid feed machines offer you the full advantage of automatic, hi-speed packaging of a limitless variety of liquid and semi-liquid products — in the food, drug, chemical and other processing fields. Just to name a few . . . catsup, salad dressing, mustard, sauces, horse-radish, flavoring agents, oleomargarine, cheese, preserves, jams, paints, extracts, liquid chemicals and pharmaceuticals.



LIQUID FEED UNIT, SHOWNdesigned to package all types of liquids and semi-liquids. Output 40 to 120 per min.—5 cu. in. to 80 cu. in.; pillow or fin-seal pkgs., all heat-sealing materials, sizes—1-13/16" x 3" to 51/4" x 13".
Pressure feed by positive displace ment piston type pump, or small Bosch-type pump, 4' x 5' x 8'; 2150 lbs.; 3/4 h.p. motors, 1600 w.

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Need Help? Transwrop's engineering staff will be glad to assist you in analyzing your packaging requirements make specific recommendations designed to improve your production—at lower costs.

Naturally, there is no obligation for this consultation service. Just check the coupon below.



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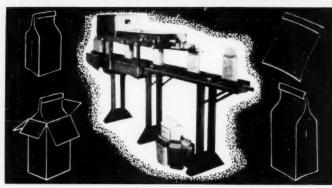
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Makes Sift-Proof Seals in Heavy Weight Paper Bags

Fry Model CSG automatically makes a double folded sift-proof heat seal in the top of any heavy weight paper bag. The first fold is securely heat sealed; the second is glued for

Bags handled include polyethylene and pliafilm lined, polyethylene coated and those

Other models available submit a sample of y

with thermoplastic top scaling bands. Simple adjustments for bogs of various heights. This model also handles bags which are not heatscalable by gluing the folds.

Machine above is perfect for granular or fine products such as insecticides, chemicals, powdered paints, fertilizers, dog foods, etc.

models available . . . when writing, please a sample of your bag and your product.

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Production goes forward at Kalamazoo Label - the year around - under ideal conditions for men, machines and materials. Our entire operation is air conditioned.

Controlling the weather, enables us to turn out more labels per day, do a finer job of printing, maintain closer register, eliminate spoilage.

This production edge is always reflected in our attractive price quotations. If you have any type of paper label problem, it certainly will pay you to consult us.

Free BOOKLET SHOWS WHY.

Write today for this 16-page booklet illustrating our production processes and sales methods which assure you of paper labels you will be PROUD to use at prices you will be HAPPY to pay.



KALAMAZOO, MICH.

Label Manufacturers EXCLUSIVELY Since 1906

Plants and people

DeLine Co., Denver, Colo., as sales representative in Colorado, Utah, Wyoming. Nebraska and Kansas.

Arthur E. Hoover has been appointed Stone Container Corp.'s sales representative in the Columbus, Ohio, area, assigned to the firm's Mansfield, Ohio, division.

Stone Container Corp. is using this life-sized golfer, made entirely of corru-



The company erates corrugated box plants in Chicago (company headquarters), Philadelphia and Mansfield. It has paper mills

in Franklin and Co-shocton, Ohio, and owns half the assets of a mill in Mobile, Ala.

Universal Folding Box Co., Inc., has announced that initial shipments on one of the largest contracts placed by the Defense Department for folding cartons will begin this week from the company's Hoboken, N. J., plant. The original Quartermaster Corps contract placed with Universal was for 39,900,000 units.

The Kerr Glass Mfg. Co. has leased space in a new office building under construction at 3440 Wilshire Blvd., Los Angeles, Calif. The space will house the executive offices and national sales headquarters of the company, which sells and distributes glass containers manufactured by Alexander H. Kerr & Co.

W. Tresper Clark of Rockwood & Co. and Dr. L. V. Burton of the Packaging Institute were among a group of civilians to receive Certificates of Appreciation from the Secretary of the Army recently "for patriotic civilian service" in World War II for work in the Technical Industrial Intelligence Committee of the Joint Chiefs of Staff

The Pioneer Division, The Flintkote Co., has announced the breaking of ground for a new \$3,000,000 Flintkote plant at San Leandro, Calif. Units to be built include a 340-by-300-ft. building to house an 80-in. corrugator with 500-ft.-per-minute capacity and allied equipment for the manufacture of corrugated shipping containers. A second building will house a



Today all signs show that the typical food shopper is changing her ways of buying. Du Pont studies in supermarkets show, for example, that she decides on two-thirds of all her purchases after she enters the store. This puts the spotlight on the point of sale . . . and a heavy responsibility on a package that can do a selling job!

Many packagers have already found Du Pont studies helpful in furnishing facts that enable them to capitalize on today's point-of-sale opportunities. Du Pont market research—such as the study that compares the "store-decision ratings" of more than 60 food classifications—can also help you evaluate the sales appeal of your package.

Technical research is another Du Pont service that's constantly at work, improving packaging films, developing new ones—that meet functional needs of modern food retailing.

To keep acquainted with the latest Du Pont packaging services, keep in touch with your Du Pont representative. He'll be glad to apply them to your business, and work with you. E. I. du Pont de Nemours & Co. (Inc.), Film Department, Wilmington 98, Delaware.

DuPont Cellophane

Shows what it Protects-Protects what it Shows

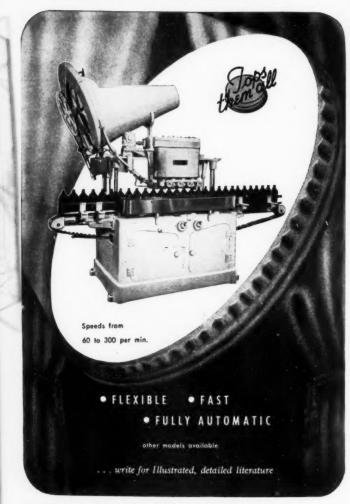


BETTER THINGS FOR BETTER LIVING . . . THROUGH CHEMISTRY

Cappers

new model RU200

the fastest screw-capping machine on the market-



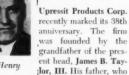
RESINA AUTOMATIC MACHINERY CO., INC. BROOKLYN 31, N. Y.

Plants and people

100-ton-per-day-capacity, six-cylinder Downingtown paperboard machine with complete stock preparation equipment. S & S Corrugated Paper Machinery Co. of Brooklyn will supply the equipment for the corrugated container operations and Downingtown Mfg. Co. of Pennsylvania, the paper machine.

William G. Henry, formerly carton sales manager at United Board & Carton Corp.,

Syracuse, N. Y. is now manager of the carton sales division



took over when the elder Mr. Taylor retired, died in the service of the U.S. Naval Air Force in 1942. Mr. Taylor, III, himself, was a pilot in the Naval Air Force in World War II and still flies frequently, piloting the company plane, "Sealing Unlimited." In addition to closures, Upressit manufactures tamperproof bands and overseals, nozzles, including a new No-Drip Nozzle, spouts and closing tools. The firm markets capping machines for applying Upressit caps and bands.

Industrial Tape Corp., New Brunswick, N. J., has acquired new warehouse space in the Commerce Mart, 251 E. Grand Ave., Chicago, providing 40% additional space.

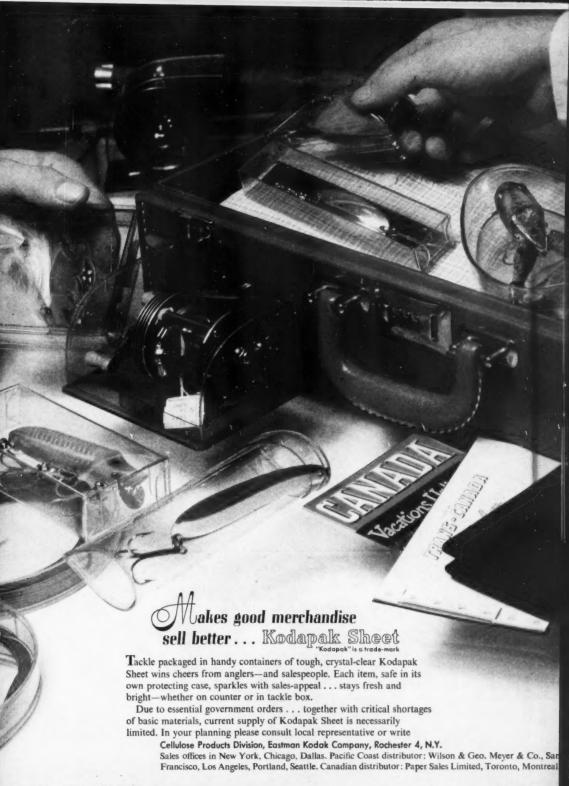
Frank Baumgardner, manager of market analysis, Anchor Hocking Glass Corp., Lancaster, Ohio, has been appointed chief of the glass container section of the National Production Authority, Containers and Packaging Division, Washington,

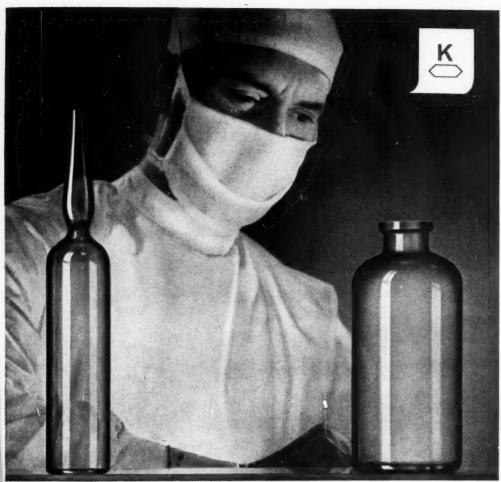
Sherman Hirsch has joined the Goodren Products Corp., New York, as sales manager.

Alexander Beal, formerly of Standard Cap & Seal Corp., is now assistant to Revnold Goodman, president of the Crystal Transparent Corp., New York.

The St. Regis Paper Co. has commenced construction of an addition to its multiwall bag plant at Pensacola, Fla. Expansion plans call for a two-story addition 360 by 144 ft. and a one-story office section addition 36 by 360 ft. The new capacity will house bag-division services.

A new plant at Tacoma, Wash., is ex-





Neutraglas Ampuls are available in capacities from 1 ml. to 50 ml.; Neutraglas Molded Containers, available in capacities from 1 ml. to 1,000 ml.

NEUTRAGLAS CONTAINERS keep solutions pure!

Neutraglas containers are stubborn. Made of a special Kimble borosilicate glass, most resistant glass practicable to mold, they offer the utmost protection to solutions requiring the highest purity and consistent potency. No method of washing or sterilization makes the slightest difference in surface or solid structure. Neutraglas containers are ideal for storage and application of vital, sensitive serums, drugs and other solutions administered intravenously . . . have high resistance to thermal and mechanical shock . . . withstand routine storage and usage.

Write us for quotations on needed types and sizes.

KIMBLE GLASS TOLEDO I, OHIO

Division of Owens-Illinois Glass Company



Plants and people

pected to be in operation carly next year. The Tacoma plant is being built as an addition to the company's kraft paper mill there and when completed will provide the company with a completely integrated operation at that center.

The Arthur Colton Co., Division of Snyder Tool & Engineering Co., Detroit, has announced the appointment of Henry Collins as office manager of the company's new plant in Paducah, Ky.

Leonard Levy has been appointed comptroller of the Mason Envelope Co., Inc., New York.

Otto Pick, 315 Terminal Sales Bldg., Portland, Ore., is one of the new sales representatives for the Mehl Mfg. Co., Cincinnati. Paul Feldenheimer, associated with Mr. Pick, will also represent the Mehl firm in the Pacific Northwest.

H. F. Kuffler has been elected vice president in charge of sales, research and new product development for Gilbert Plastics, Inc., Hillside, N. J.

Two new vice presidents of Continental Can Co. are Lawrence Wilkinson and E. R. Van Meter. Mr. Wilkinson, formerly director of the New York Civil Defense Commission, is assistant to Lucius B. Clay, board chairman. Mr. Van Meter is now vice president in charge of the Paper Container Division.

Ben Nash, 69, professor of marketing at New York University and long known as one of the "grand old men" of modern package design, died on Sept. 21 in Bridgeport, Conn. Mr. Nash was a founder of the American Institute of Designers in New York, a member of the Art Directors Club and an honorary life member of the Society of Industrial Engineers. He was the author of the text book "Developing Marketable Products and Their Packaging," widely used by universities and colleges throughout the country. Six months ago Mr. Nash was awarded the Medal for Achievement by the Industrial Designers Institute's National Board for extraordinary achievement in the profession.

George W. Shannon, 80, dean of salesmen and formerly a director and vice president of Robert Gair Co., Inc., New York, died recently. Mr. Shannon started with the Gair company as a salesman in 1903. He was active in the firm's affairs until two weeks before his death.



WHEREVER the packaging industry uses heat controls, there you will find durable, dependable Robertshaw Controls, famous for their flexibility, simplicity and day-in, day-out performance.

Model D-1, for example, requires no separate "Off" switch. Mechanical over-center snap-action make-and-break mechanism is actuated by a hydraulic thermostatic element consisting of builb, capillary tube and diaphragm. Fine silver contacts and bridges. Case-hardened steel levers and supports. Stainless steel, electrically welded diaphragm. Entire mechanism mounted in a pressed steel body insulated with Bakelite. Write for catalog.

In Home and Industry, EVERYTHING'S UNDER CONTROL



Next March...



21st National Packaging Exposition Atlantic City, April 1-4

the most important issue in Modern Packaging's history!

It will be the magazine's 25th Anniversary Issue.

It will also be the annual Packaging Show Number.

It will be circulated to a record breaking audience, largest in 25 years.

It will contain the most memorable series of special editorial features ever published in a packaging magazine.

It will give *more* advertisers more value than they've ever received from any previous issue.*

*Therefore, if you want more customers in the packaging field, you should be advertising in the March issue, too. Get free descriptive brochure and full details now. Write to Advertising Department, Modern Packaging Magazine,

575 Madison Avenue, New York 22, N.Y.

For your information

At the first annual meeting of the National Flexible Packaging Assn., held recently in New York, the following officers and directors were elected for the coming year: President, J. P. Duffy, Union Bag & Paper Corp.; vice presidents, R. E. Hanson of Milprint, Inc., W. L. Moore of Shellmar Products Corp. and R. E. Pentz of Oneida Paper Products, Inc.; treasurer, W. W. Young, American Paper Goods Co.; directors, B. C. Betner of Benj. C. Betner Co., Morrie Boas of Flexible Package Co., H. E. Hallman of Columbia Paper Products Co., Karl R. Hines of Nashua Gummed & Coated Paper Products Co., Floyd A. Holes of Floyd A. Holes Co., Theodore Isen, of Paramount Paper Products, Inc., Robert S. Jones of The Dobeckmun Co., A. E. Weisberg of Comet Paper & Envelope Co., and J. F. Zorn of Custom Made Bag Co. John M. Cowan was re-appointed managing director for another year. The association's headquarters recently were moved to 850 Euclid Ave., Cleveland 14, Ohio.

Daily attendance prizes will be awarded on each of the five convention days at the Canning Machinery & Supplies' Assn. exhibit during the forthcoming Canners' Convention to be held at Atlantic City in January. Awards will be made to those canners and members of their families who register at Convention Hall. Drawing slips will be available at all exhibition booths and drawings will be made each day at 5 p.m.

The Packaging Machinery Mfrs. Institute has published a new directory covering makers of all types of packaging machinery. The looseleaf, leather-covered directory is designed as a ready reference for purchasing agents, factory superintendents and others. One section lists the kind of equipment and the names of manufacturers making it. The other section lists alphabetically the names and addresses of machinery makers and infor-

mation on the machines each makes. The directory, priced at \$10, may be obtained from the Institute, 342 Madison Ave., New York 17, N. Y.

Interest in the Folding Paper Box Assn. of America's motion picture, "The Magic Box," is evidenced by the number of bookings requested for the film. As of Aug. 31, the film had been booked 1,044 times. The largest number of requests have come from schools—particularly at the college level—where in many cases "The Magic Box" is used as an integrated part of marketing, advertising and merchandising courses.

More than 500 executives of the canning and allied industries from practically every state in the union attended the dedication last month of the National Canners Assn.'s new half-million-dollar research building at Berkeley, Calif. The building, located at 1950 Sixth St., is a modern two-story structure equipped with the latest in laboratory equipment. Ceremonies included the turning over of the keys to the president of the association and the unveiling of a wall mural depicting the relationship of the laboratory to the various steps in preparation, processing and distribution of canned foods.

Charles W. York has been appointed executive secretary of the Pennsylvania Canners Assn., 25 N. Duke St., York, Penna. Mr. York succeeds William A. Free, executive secretary for 17 years, who has resigned to become president of the Hungerford Packing Co.

"Modern Labels for Canned Foods," a manual to assist food canners in using clear, concise and uniform terms to describe their products accurately to the consumer, has been issued by the National Canners Assn. The 315-page manual, a revision of earlier editions, is in looseleaf form to facilitate insertion of new labeling information and keeping the

manual up to date. The book is a compilation of requirements under the Food and Drug Act and of additional information that may be added voluntarily to canned-food labels, and includes a summary table of label terms.

A convenient reference book designed to simplify handling of defense-order packaging has been published by The Cromwell Paper Co. Called "Cromwell's Handbook of Military Packaging," it was compiled for use of manufacturers of military supplies and materials as well as the supplier of packaging materials who serve them. The book is offered free by the Cromwell company, 4801 S. Whipple St., Chicago 32, III.

Specialists in the packaging field may be commissioned directly from civil life in the Air Force as Packing Officers, according to an announcement of the First Air Force, Mitchel Air Force Base, N. Y. A university degree is requisite, except for applicants with less education but outstanding qualifications in the field. These areas of experience will qualify a man for this commission: preparation of commodities for distribution and storage; research and development or manufacture and distribution of packaging materials, containers and equipment; the transportation and storage of commodities; a broad knowledge of materials, methods and equipment utilized in the packaging field. Appointments will be made in grades from Second Lieutenant to Captain. Information may be obtained by writing to the Department of Military Personnel Procurement, First Air Force, Mitchel Air Force Base, N. Y.

Judges of the \$800 slogan contest being conducted by the Fifth National Plastics Exposition, to be held March 11-14, 1952, in Convention Hall, Philadelphia, have been announced by the Society of the Plastics Industry, sponsor of the exposition. They are Rear Admiral Charles W. Fox, chief of the Navy Bureau of Supplies and Accounts; Ben Hibbs, editor of the Saturday Evening Post, and Mayor Bernard Samuel of Philadelphia. Closing date for entries was Nov. 1.

The American Management Assn. has opened a new Management Center adjacent to its offices on the 11th floor of the McGraw-Hill Bldg., 330 W. 42nd St., New York, to be used as headquarters for the AMA management workshop seminars heretofore held in hotels. The Center consists of five seminar rooms, a large lounge with serving pantry and an openair terrace, which will allow a greatly ex-

New directors of the National Flexible Packaging Assn.: seated (left to right)—Warren W. Young, Roy E. Hanson, William L. Moore, James P. Duffy, Robert E. Pentz, John M. Cowan, Karl R. Hines; standing (left to right)—James F. Zorn, Robert S. Jones, Theodore Isen, Fred Hinkle, Harry E. Hallman, William Boas, A. E. Weisberg.



"Selling is Serving!"

Meet America's Leading Salesman"



Your Package is your prime salesman at Point of Purchase



lants located throughout the South

Executive Offices: LYNCHBURG, VA. . Sales Offices: CHARLOTTE, N. C.

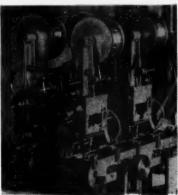


they came... they saw... they ORDERED...

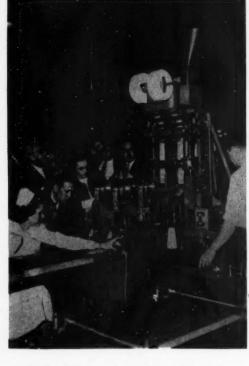
The completely automatic S & S "STOKESWRAP" certainly held the attention of many packaging men... at a recent National Packaging Exposition. Visibly impressed by the *automatic precision* of the "STOKESWRAP", onlookers watched as the unit produced up to 140 neatly packaged tea bags... complete with printed tags.

The "STOKESWRAP" automatically and accurately formed the bags and filled them with the correct amount of tea fed from a hopper. A twin heat-sealing unit simultaneously made two "four-seal" serrated packages, and conveyed them to the Tagging Machine.

Printed tags are automatically fed and cut from reels . . . the string, too, is automatically fed and cut to the required length. The Tagging Machine then



Close-up of Automatic Tagging Unit . . . showing coils of wire, stapling stations, and conveyer.



staples the string to package and printed tag. Certainly the most impressive fact was the *completely automatic* operation of the "STOKESWRAP"



Note the neat stapling job.

and Tagging Machine... from forming, filling, and sealing, to cutting and stapling both the string and tag to the tea bags. The packages are then automatically counted and stacked, delivered in two rows on a conveyor, for one attendant to do

the cartoning . . . with sufficient time for inspection.

Several packaging men were so impresed with the completely automatic operation of the "STOKESWRAP", and by its production speed, that orders were taken on the spot. And, if you missed this demonstration, we suggest you write for complete details on the "STOKESWRAP".

Packaging Machinery

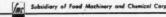
Paper Sax Machine

Frankford, Philadelphia 24, U.S.

STOKE SEMITH &

Exclusive West Coast Distributor: Anderson-Barngrover Division of FMI

San Jose 5, California



For your information

panded program of the workshop seminars. Two hundred seminars, dealing with various phases of personnel, production, marketing, packaging, finance, insurance and general management will be held during the 1951-52 season.

"Read the Label on Foods, Drugs, Devices, Cosmetics" is a new illustrated consumer-information booklet issued by the Food and Drug Administration, Federal Security Agency. The 40-page publication tells what to look for on labels to be a better family purchasing agent. Copies may be had from the Superintendent of Documents, Government Printing Office, Washington 25, D. C., at 15 cents each.

The Philadelphia Division of Yale & Towne Mfg. Co. has published a 24-page booklet titled "The How Book of Cost Cutting Materials Handling." A revised edition of a previous booklet printed in 1947, it was prepared under the guidance of Dr. V. S. Karabasz, Professor of Industrial Management, Wharton School, University of Pennsylvania. Request copies from Yale & Towne Mfg Co., 11,000 Roosevelt Blvd., Philadelphia, Penna.

Plans for the third Plant Maintenance Conference, to be held concurrently with the Plant Maintenance Show at Convention Hall, Philadelphia, Jan. 14-17, call for the most intensive examination of maintenance problems ever undertaken, according to Clapp & Poliak, Inc., exposition management. Thirty-four separate discussions will be conducted, with more than 100 industrial experts leading

What's Doing

Nov. 8-9—American Management Assn. (Production), Palmer House, Chicago.

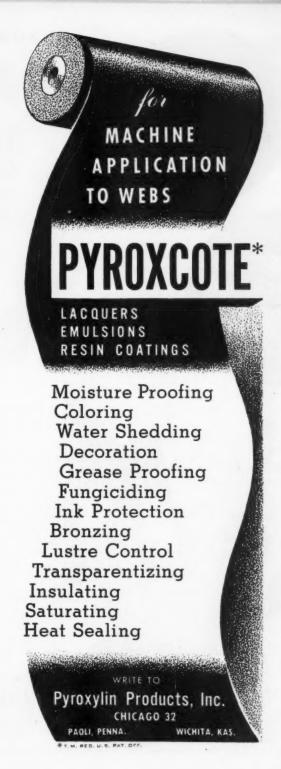
Nov. 8-11-National Barrel & Drum Assn., Statler Hotel, New York.

Nov. 12-14-National Licensed Beverage Assn., Bellevue-Stratford, Philadelphia.

Nov. 12-15—National Automatic Merchandising Assn., Chicago. Dec. 2-6—Super Market Institute,

mid-year meeting, Hollywood Beach Hotel, Hollywood Beach, Fla.

Dec. 5-Toilet Goods Assn., Scientific Section, Waldorf-Astoria, New York.



Serves You Right!

LUSTEROID

VIALS and TUBES Pack your Products with These Advantages Minimum package weight Product visibility Complete protection Printability Unlimited colors Savings in labeling Savings in handling Savings in shipping

These modern plastic containers come in sizes from ½" to 1½" in diameter and lengths up to 6". Cork, slip-on, or screwcap closures. Write for details and samples today.





Here is the ideal protective packing. Made of cotton wadding, Pad-Pak has resilience to absorb impact... to protect against scratches and rub marks. Glazed outer surface gives extra body, greater ease in handling, and permits accurate cutting to any shape.

tected from damage in transit by Pad-Pak.

But safeguarding cabinets in shipment is only the beginning of a long list of Pad-Pak uses. Any item subject to breakage or marring—from perfume bottles to polished metal parts — reaches its destination undamaged when cushioned with this extra soft, resilient material.

Ask for samples of Pad-Pak, stating your choice of thickness — from % to ½ inch. Write Dept. M11.

IMMEDIATE DELIVERY

Union Wadding Co.

MODERN PACKAGING

For your information

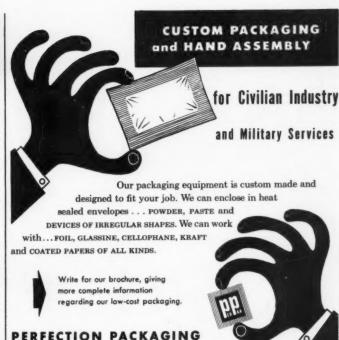
the panels. Six general conferences, 27 sectional meetings and the annual banquet are scheduled. Two hundred companies will display products and services, and the exhibit area will cover four times that of the first show. Advance registration cards and hotel information may be obtained from Clapp & Poliak, Inc., 341 Madison Ave., New York.

A new series of "Fact Reports" telling about the increased sales volume and profits produced by window and in-store displays has been complied by the Pointof-Purchase Advertising Institute. These reports present actual case histories of the successful use by leading national advertisers of product displays in retail outlets and show how various types of displays in retail stores add to the effectiveness of an over-all advertising program. A new "Fact Report" will be issued by POPAI about once a month in the future. Any national advertiser who would like to have copies may obtain them on request to J. K. Gould, executive director of the Point-of-Purchase Advertising Institute, 16 E. 43rd St., New York.

An ingenious new industrial catalog to aid in tape selection, recently issued by Polyken Industrial Tape, is in the form of five file cards, standard 8% by 11 in. in size, conveniently held together in a cardboard folder. The tabs remain clearly visible and the cards are easily removed. Cards are provided for "General Purpose Tapes," "Electrical Tapes," "Special Purpose Tapes" and "General Information." Across each card are sample stripes of the tapes described, along with technical specifications, general information on uses, etc. Copies of the catalog may be had by writing to Section PI, Polyken Industrial Tape, Department of Bauer & Black, 222 W. Adams St., Chicago 6, Ill.

Plant visits by members of the Fibre Drum Mfrs. Assn. at the recent midvear meeting in Detroit included a general conference with General Motors packaging engineers at the General Motors Bldg.; the Ford assembly line, plastics and powdered metals divisions at the Dearborn plant; and one of the large Detroit motor freight terminals where a single carrier, Norwalk Truck Line Co., handles 750 tons of LTL freight daily. The next annual meeting of the association will be held May 8-9, in Washington, D. C.

"Greaseproof Papers and Films" is the subject for the November program of the Chicago Section of TAPPI. The program





16-19 Mill Street, Shelburn, Indiana

LOOK at these aniline-printed shoe cartons

SEE their clean, sharp, crisp printing

REMEMBER they were printed* from MOSSTYPES®...the pre-madeready, precision-molded rubber printing plates

* By M. B. CLAFF & SONS, INC., Brockton, Mass.

WORLD'S REST SOURCE for ...

RUBBER PLATES MOSSTYPE and DESIGN ROLLERS CORPORAT

33 FLATBUSH AVE., Brooklyn 17, H. Y. From ART to PLATES . . . a complete production service for converters everywhere Cady Packaging Micrometers for accurate calipering of boards, papers. foils, plastics, felt, fabrics, metals, any material up to ½" thickness. All have glass covered, horizontal dials, for quick, direct readings. Used throughout industry, wherever accurate measure is important. Complete line includes Laboratory, Desk, and Portable models. Write for complete information and prices.



Basis Weight Scales, accurate, direct reading—no computation necessary. Tissue Scale on left; Paper Scale on right; weigh sheet of known size to determine 480 or 500 sheet weight. Boxboard Scale also available. Write Cady for complete data.



Cady Bursting Strength Tester registers bursting pressure in lbs. p.s.l. for "Cady" or Mullen test. Meets CCC specifications. Electric motor actuates uniform 12 second testing cycle. Extremely accurate every time cerrugated clamp prevents alippage of material under test. For box-boards, papers, fabrics and other materials requiring uniform burst tests.



Write for complete information and prices of Cady Testing Instruments for packaging materials: Basis Weight Scales for papers, tissues, boards; Micrometers, Burst Testers.

E. J. CADY & COMPANY 134 N. LA SALLE ST. CHICAGO 2, ILL.

Ouicker, Easier

FILLING BOTTLES, JARS, TUBES, CANS



The Anderson Hand Filler is fast, easy to operate and strictly sanitary. It handles liquids, semiliquids, creams, pastes and greases. Hopper capacity, 5 gallons, quantities up to 16 ounces dispensed per stroke. Entire machine, except base plate, is stainless steel or nickel silver. Easy to clean. Rubber feet under base to prevent slippage. Filler (Model C-2-3) can also be supplied with foot

Send for Bulletin No. 11-29



NDERSON BROS. MFG. CO., ROCKFORD, ILL.

treadle.

Anderson Fillers

Military Packaging



Barrier Materials

IAN MIL AN Covering Specifications:

Write today for Free Swatch Book showing latest developments in

barrier materals for Defense Program packaging. Write Dept. 511.



NYLCO PRODUCTS INC. 530 Main Street, Clinton, Mass.

For your information

will be presented Nov. 19 at the Chicago Bar Assn., 29 S. La Salle St., Chicago. Warren R. Price, chairman of the publicity committee, announces that the afternoon session will include Robert Erickson, Erickson Research Laboratories, discussing "Formations"; Thomas Luey, Sutherland Paper Co., "Theories of Coating Applications"; L. E. Whitmore, Bakelite Co., "Polyethylene Liners"; and M. L. Downs, Thilmany Pulp & Paper Co., "Glassine Papers and Laminations." Selection of a speaker for the evening session is to be announced.

Three American packaging experts have been sent to Europe by the Economic Cooperation Administration under its technical assistance program to demonstrate how to save materials, production costs and manpower through modern packaging methods. They are Lee R. Forker of the Quaker State Oil Refining Corp., Edwin W. Ely of the Commodity Standards Division, U. S. Dept. of Commerce, and William C. Reiser, London director of Loewy Associates. The trip will be for a six-week period and is considered by ECA to have considerable potential importance because of its defense implications. The countries included in the project include France, Denmark, Norway, Germany, Austria, Italy and the Benelux countries. An exhibit of samples of American packaging will be on display at the sessions.

American Type Founders has just published an eight-page booklet showing how to use Lydian type faces designed by Warren Chappell. In it, Mr. Chappell has designed a series of typographic arrangements with photographs and decoration which are within the resources of the average printer. This Lydian Style Book is the third in a series of helpful aids in the selection and use of various type faces offered by ATF. Request copies from the ATF Advertising Dept., Elizabeth B, N. J.

Russel Wright, New York industrial designer, was elected president of the Society of Industrial Designers for the year 1951-52 at the recent annual meeting of the organization in Highland Park, Ill. Mr. Wright succeeds Dave Chapman of Chicago, who has been president for the past year. Other officers elected were Carl Bjornerantz of Chicago, vice president; Jean O. Reinecke of Chicago, secretary; A. Baker Barnhart of New York, treasurer. The conference unanimously approved changing the society's publication, U. S. Industrial Design, from an annual to a quarterly magazine.



low cost metal or all-paper closures

Niemand Bros. containers can really help promote the sale of all sorts of merchandise. They adequately protect your products at all times. And efficient, low cost dispenser closures may be made entirely of paper when required.

Your needs—from designs through production to delivery—can be handled promptly. Immediate attention will be given your inquiry.

NIEMAND BROS. INC

Manufacturers of PAPER TUBE PRODUCTS



37-11 Thirty-Fifth Avenue, Long Island City, New York RAyenswood 8-0909



planned Spinach packaging and weighing operation in New York State.

Sales

Service

from

Coast

to

Coast

An efficient, well Spend Weighing Equipment Dollars Wisely . . .

The facts are that practically everything processed uses scales . . . weighing equipment of some nature. Such operations as ingredient compounding, laboratory work, blending of colors, counting by weight, general packaging and production line checkweighing are the most common uses. Many, many products of all kinds owe their exceptional uniformity and accuracy to sound scales. Engineers entrusted with profitable production now generally agree the weighing element is one of the most vital cost control measures at their disposal. This is why weighing equipment dollars should be spent wisely. Few individual equipment requirements do more to improve uniformity and quality than the right weighing units in the right place, and no weighing equipment is better than EXACT WEIGHT Scales. Today these famous industrial scales are doing more varied jobs, in more plants, in manual, semi-automatic and fully automatic operations than ever before. Their capacity to save time, money, product and labor are thoroughly recognized by men responsible for profitable volume production everywhere. Write for information to cover your needs.

914 W. Fifth Ave., Columbus 12, Ohio 2920 Bloor St., West, Toronto 18, Canada

Quick uiz

FOR PACKAGING MEN

- Q. Which packaging magazine provides the greatest amount of helpful editorial material and how-to-do-it information for its subscribers?
- A. An actual page-by-page count reveals that for all twelve issues in 1950, Modern Packaging provided far more data to its readers than any of the other four publications in the packaging field.

Specifically, Modern Packaging gave 70% more pages than the second magazine, 127% more than the third, 150% more than the fourth and 214% more than the

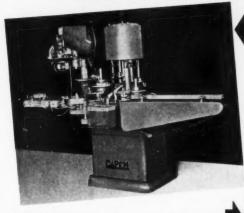
- Q. Which magazine is the first choice of packaging adver-
- A. Judged by the votes of the men who should know bestthe companies and advertising agencies who back their opinions with actual advertising appropriations—Modern Packaging is far and away the field's most powerful and influential medium.

In 1950, Modern Packaging carried the advertising of 82% more advertisers than the second magazine, 361% more advertisers than the third, 373% more advertisers than the fourth and 419% more advertisers than the fifth. And in this same twelve-month period, 181 companiesalmost half of all its advertisers-used Modern Packag-ING exclusively to carry their messages to the packaging

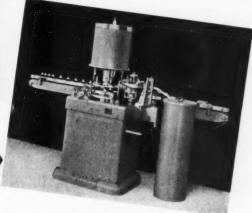
- Q. Which packaging magazine presents the greatest amount of helpful advertising messages?
- Again the answer is Modern Packaging! The record shows that in 1950 Modern Packaging carried greater advertising volume than three of the other four magazines combined and twice as many pages as the second ranking publication!
- Q. Which of the magazines is the oldest and most influential in the field?
- The records show that before the first issue of MODERN PACKAGING, back in 1927, packaging was not clearly recognized as one of the greatest single factors in modern merchandising and distribution. Modern Packaging pioneered that idea and has been largely responsible for establishing packaging operations on a sound and scien-

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Washington review

Beginning in 1952 packaging machinery will be more difficult to obtain. Allocations of controlled materials—steel, copper and aluminum—for use in the manufacture of packaging machinery will be cut back as a result of the increasing serious shortages of these metals.

This does not mean that essential equipment will be impossible to obtain. It simply means that the packager will have to present his case carefully to NPA authorities in order to obtain the necessary authorization. The essentiality of your requirements will have to be made clear and that in turn means attention must be given to details and to careful, even skillful, presentation of the individual factors involved.

The over-all essentiality of packaging machinery, of course, is generally recognized—just as it was during World War II, when limited production was carried on even during the height of the materials emergency.

Actually, there is no adequate substitute for packaging machinery, particularly when there is a growing shortage of skilled manpower and when record output is called for in the face of mounting material shortages.

The problem for the packager is one of improvisation in the use of existing equipment; increased attention to maintenance to keep present machinery running at peak efficiency; and, finally, the acquisition of replacement or new machinery where authorized need exists.

Meanwhile, representatives of NPA's metalworking industry division recommend that the packaging machinery industry take up its production slack caused by cutbacks with subcontracting work for the machine tool industry. Many packaging machinery firms are already engaged in such work, with some having as much as 50% of their facilities busy with direct military contracts.

The packaging machinery industry has again won commendation from NPA for its very active participation in the scrap drive. Members of the industry have demonstrated a keen awareness of responsibility for speeding the defense program.

Metal cans

An amendment to Can Order M-25 clarifies the intent of NPA regarding selection of a base period.

The original order permitted a packer to choose 1949 or 1950 as a base period in determining the number of cans he could use for individual items.

The intent was to permit a choice of

either base-period year for various products. Thus, you can choose 1949 as your base period for canned beans and 1950 as your base for canned peas.

M-25, as previously reported, set the pattern of production and use of cans for the 12 months beginning Oct. 1. The order divides all uses of cans by canners into Groups I, II and III—and sets a rate of use for each group. This rate is a percentage of the number of cans of the size used for a given product during the base period.

Sulphur

Probably by the time this page appears in print, stiffer controls governing sulphur use will have been announced. Because sulphur is vital in the manufacture of cellophane and paper, this column has continually reported the changing picture.

Defense demands for this material are critical and cellophane could get caught in the pinch. Sulphur output has increased from 5,188,000 tons in 1950 to an estimated 5,251,890 tons in 1951, but defense and essential civilian uses, both categories involving new uses, threaten to put supply out of balance.

Cellophane demand, except for infrequent soft spots in the market, has practically always outpaced supply. Recently, Olin Industries brought long-awaited new capacity into operation. The net gain from these new facilities could be partially offset if sulphur allocations have to be cut. However, latest indications are that NPA will grant special allocations of scarce sulfuric acid and carbon bisulfide to keep new facilities in production.

Collapsible tubes

Tube users can expect a critical period during first-quarter 1952, for tin, lead and aluminum are expected to be in very tight supply. Lead may improve first; then aluminum. Tin is expected to be tight until possibly the latter part of 1952.

The industry advisory committee is considering a proposed amendment to Collapsible Tube Order M-27, which would limit inventories to a 60-day supply of any size or type of tube. The amendment would not apply to small users who ordinarily maintain inventories of not more than 500 gross of any size or type.

Aluminum closures

NPA has been asked to amend Order M-26 to permit manufacturers to seek new customers to replace lost customers. Because of the public health aspect, the industry has been placed in the favorable position of being permitted to consume aluminum at a higher rate than other manufacturers.

NPA will consider the requested amendment, but pointed out that aluminum is not essential in sealing milk and that substitutes can be found in less critical materials.

Polyethylene

Because of increased production, more polyethylene is currently available for civilian uses. Du Pont alterations in manufacturing procedures have increased that firm's output. Bakelite's new plant is now operating, but full capacity has been delayed by inability to obtain several pieces of equipment needed for full production.

Polyethylene output, it is estimated, has been running at a figure in excess of 60,000,000 lbs. a year. However, the total amount available is probably not so large as many people have believed.

In October, allocations of polyethylene were as follows: civilian use, 65%; military, 35%. Civilian use, in turn, was broken down thus: essential use, 42%; free-market supply, 23%.

It is noteworthy that military demand was off 8% from September figures. The cutback resulted from a decline in packaging and coating purchases. It is expected that demand will be resumed and that Ordnance requirements will increase. Bottles and carboys haven't yet cut much of a figure military-wise, but they may soon; and, if so, civilian users could readily find themselves gasping for supplies.

Packaging products now take 30% of the polyethylene allocated for essential civilian goods. Drum liners for chemicals and pharmaceuticals have been placed back on the essential list, since users have finally been able to prepare a reliable record of essentiality. Film, tubing and wax mixes for frozen foods are obtaining increased amounts.

Bottles come out of the free supply, for almost none of the required polyethylene can be sought on a DO basis. The 1951 production of bottles will probably be less than that of 1950, though demand itself is higher.

The general feeling now is that stiffening military demand may not occur to cause difficulty until after first-quarter 1952. Civilian demand, at present, is thought to be nearly double the actual need-representing extravagant claims made in hopes they will increase each user's allotments. They don't.

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KROMEKOTE GIFT WRAPS. Booklet contains sample swatches of Kromekote Colorcast paper in several attractive colors in the new gift wrap weight. The Champion Paper & Fibre Company. (Y-50)

ALUMINUM PRODUCTION. Interesting brochure highlights the facilities and methods of production used for making aluminum at the Jones Mills Reduction Plant of Reynolds Metals Co. (Y-51)

MILITARY PACKAGING SUPPLIES. Price lists on various items necessary to military packaging, such as humidity indicators, waterproof case-liner adhesive, pressure sensitive tapes, barrier materials, etc. Packaging Division, E. W. Twitchell Inc. (Y-53)

FABRIC PRINTER. Detailed data on the Markem model 10A for high speed printing of information on various cloth items. Markem Machine Co. (Y-53)

POLYETHYLENE BAG MACHINE. Folder describing the Hilker Radiant Seal bag machine which makes polyethylene bags by use of a radiant heat beam for sealing. In cludes data on the V-H-V static eliminator. Hilker Products Corp. (Y-54)

CARTON FORMER. Description and specifications of a highly adjustable machine for automatically erecting cartons from diecut blanks. Palmer Division, Package Machinery Co. (7-55)

PROCESSING MACHINERY. Illustrated booklet shows a complete line of machinery for processing paper products, including printing presses, waxers, combiners, etc. Hudson-Sharp Machine Co. (Y-56)

CREPED WADDING FOR MILITARY PACKAG-ING. Guide for specification, procurement and use of creped cellulose wadding in military packaging. Recommends types and thicknesses and methods of packing. Kimberly-Clark Corp. (7-57)

ANILINE AND GRAVURE PRESSES. Folder illustrates and describes the features of Halley aniline and rotogravure presses for paper, foil, cellophane, plastics and similar materials. Marac Machinery Corp.

CONTAINER CLEANFRS. Bulletin describes two machines for cleaning bottles, jars, vials and other containers. One cleans by air; the other uses a liquid cleaning agent. Perl Machine Mfg. Co. (Y-59)

SEAMLESS PLASTIC VIALS AND TUBES. Many types of seamless vials and tubes are listed and illustrated in this pamphlet. Lusteroid Container Co. (7-60)

WRAPPING MACHINE FOR SEA FOOD. Folder tells about a machine with features which suit it for automatically applying plain or printed wraps to cartons containing sea food products. Hayssen Mfg. Co. (7-61)

JAR AND BOTTLE FILLING MACHINE. Bulletin giving the features and data on the Arenco Type GAM jar and bottle filling machine for marmalade, apple sauce, mayonnaise, mustard, paint, varnish, oil and other liquids. Arenco Machine Co. Inc. (Y-42)

PACKAGE CONVEYOR BEITS. Catalogue insert contains illustrations and details about three types of conveyor belts designed for moving packages and other boxed materials. B. F. Goodrich Company. (Y-43)

ROTARY PRINTING. Booklet containing extensive information on Champlain rotary presses for printing by rotogravure, aniline, and letter press. Fully illustrated. Contains information on auxiliary equipment and accessories. Champlain Co., Inc.

CORRUGATED BOXES FOR MILITARY PACK-AGING. Booklet tells how to pack war materials in corrugated shipping boxes. Illustrates many typical applications for both small and large items. The Hinde & Dauch Paper Co. (Y-63)

LABELER. Features and specifications of the readily adjustable CRCO New-Way Model E labeler for round cans. A special feature is the elevation of the cans during labeling which permits gravity feed to the caser. Chisholm-Ryder Co. (Y-66)

INFORMATIVE LABELING. Helpful booklet describes and illustrates various popular types of informative labeling for a large variety of products. Dennison Manufacturing Co. (Y-47)

BAG SEALER AND GLUER. Description of the Fry CBG heat sealer and gluer for automatic and square style bags plus complete specifications and operating details are contained in this bulletin. George H. Fry Co. (Y-68)

MILITARY PACKAGING HANDBOOK. Booklet explains the meaning of various classification terms used in military packaging specifications. Diagrams show proper methods for constructing water-proof case liners and for preforming pressure sensitive bags or pouches. The Cromwell Paper Co. (Y-69)

LABEL FEEDER. Label Seal-It, designed to seal bags with paper labels, is illustrated and discussed with its features. Globe Products Heat Seal Corp. (7-70)

SYNTHETIC THICKENER AND PROTECTIVE COLLOID. Information bulletin contains details about Polyco 296, a new high polymeric raw material which may be used as a protective colloid, a pigment dispersing medium and as a film former. American Polymer Corp. (Y-71)

BAG MACHINE. The new Matador bag machine suitable for use by firms requiring long runs on one size bag and for those who need to change quickly from size to size without elaborate adjustment, are illustrated and described with specifications. H. H. Heinrich, Inc. (7-72)

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PLIOFILM LINED BAGS. Leaflet describes Kard-O-Pak, a self opening, flat bottom bag with a protective Pliofilm liner for packaging foods, chemicals, drugs, and similar products. American Bag & Paper Corp. (Y-73)

BAG MACHINE. The features and complete specifications of the Manhasset Paper Converter Model BM-24, a high speed bag machine having a range of from 1½" to 12" in bag widths and from 6" to almost 20" in bag lengths. Manhasset Machine Co. (7-74)

BARRIER MATERIAL SAMPLES. Sample sheets of fifteen barrier materials which are approved for packaging various items under military packaging specifications. Nyloo Products Inc. (Y-73)

GOVERNMENT SPECIFICATION "SCOTCH"
TAPES. Handy pocket size folder listing
eight official U.S. Government specifications for tape, including twenty sub-sections, and citing the corresponding
"Scotch" brand pressure sensitive tapes
for each section. Minnesota Mining &
Mfg. Co. (Y-76)

STARCH FOR PAPER MAKING. Folder describes a number of types of starch used in the paper industry for paper making, coating and converting. National Starch Products. (Y-77)

TRANSPARENT PLASTIC FOR PACKAGING. Samples of various gauges of Vuepak, a versatile, transparent, structural plastic, from .005" to .020" are given. Information on using the various gauges to their best advantage. Monsanto Chemical Co. (Y-78)

SHEAR HARDNESS AND DIAMOND SCRATCH TESTER. Folder explains the use of a special machine and procedure for testing the ability of plastic materials and plastic coated surfaces to resist scratches, digs, scrapes and similar damage. Taber Instrument Corp. (Y-79)

HEAT SEAL LABELS. Booklet covering the use of Pervenac and Imac plastic coated papers in heat seal labels. Contains charts with recommendations on inks and types for use on various labeling machines. Nashua Gummed & Coated Paper Co. (Y-80)

POLYFILM. Question and answer folder explains the types and grades available and the advantages of packaging in Polyfilm, the polyethylene film manufactured by Extruders, Inc. (Y-81)

METAL EDGE BOXES. Brochure tells the advantages of the metal edge method for packaging, material handling, and inventory control, in the experience of outstanding concerns in 77 different industries. National Metal Edge Box Co. (Y-22)

PROTECTIVE CUSHION WRAP. Booklet tella about Sof-Rap, new exterior-interior wrap and Krepak, a single ply crinkled interior wrap cushioning, both of which should be of interest to manufacturers and packagers of various hard goods. Nichols Paper Products Co. (Y-83)

LABELING MACHINE. Bulletin describing a thermoplastic labeling machine for labeling bottles, jars, tin or plastic containers, eliminating the need for glue. New Jersey Machine Corp. (Y-84)

STOKESWRAP AUTOMATIC PACKAGER. Bulletin illustrates the various types of packages which can be formed and filled automatically on Stokeswrap machines. Two machine models and several variations are described. Stokes & Smith Co. (Y-83)

LIQUID FILLING EQUIPMENT. Specifications, illustration, and features of the Packer Gravity liquid filling machine, which fills pint, quart and two gallon cans, are given in this bulletin. Packer Machinery Corp. (Y-84)

LABEL PASTE. Technical service bulletin on Paisley Grip-Tight label paste for use in affixing paper labels to metallic and non-metallic surfaces. Contains properties, applications, and instructions for use. Paisley Products Inc. (Y-87)

UNBREAKABLE POLYETHYLENE BOTTLE. Illustrated summary of twenty-four applications of the unbreakable Plaxpak polyethylene bottle in the drug, cosmetic, and other fields. Also described are the services Plax provides in connection with bottles. Plax Corp. (Y-88)

NEW PROCESS GLUE. Characteristics and special grades of Swift's New Process Glue are covered. Swift and Co. (Y-89)

UPRESSIT CAPS. Discussed are Upressit caps in their various shapes and forms. Table showing the various standard sizes is included. Upressit Products Corp. (Y-90)

COLLAPSIBLE METAL TUBES. Catalogue outlining versatility and advantages of Wirz collapsible tubes and small plastic specialties. Illustrations and specifications for guidance in developing modern, attractive, convenient, safe packages. A. H. Wirz, Inc. (Y-91)

WRAPPING MACHINE. Operational data, capacity, specifications, accessories available, and other information on the new Wrap-King multi-form wrapping machine. Articles wrapped by this machine are illustrated. Wrap-King Corp. (Y-92)

CONTAINER PLUGS, SLEEVES AND CAPS. Illustrations and dimensions of various container plugs, sleeves and caps that give protection against dust and dirt and damage in spraying, are given in this bulletin. Cleveland Container Corp. (Y-93)

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U.S. patents digest

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Lined Multiple-Blank Master Shipping Carton, H. W. Beck, Jr., and C. F. Gibbons (to Gaylord Container Corp., St. Louis, Mo.). U.S. 2,564,948, Aug. 21. A shipping carton comprising a relatively tall multisided tubular upright liner closed at its upper and lower ends, an upwardly opening multisided tubular cover for the lower portion of liner and a downwardly opening multisided tubular cover for the upper portion.

Intermittent Actuated Vacuum Bag-Filling Machine for Fibrous Material, M. Goldberg, New York, N.Y. U.S. 2,564,969, Aug. 21. In a filling mechanism for automatically and intermittently filling a fabric container made of nonporous but collapsible fabric with fibrous material in successive steps, a bin under air pressure and having an outlet in its lower face, a jacketed receiver having a perforated portion and an inlet in its upper face in alignment with said bin outlet.

Solenoid-Controlled Taping Machine, C. Hess (to S & S Corrugated Paper Machinery Co., Inc., Brooklyn, N.Y.). U.S. 2,564,901, Aug. 21. In a taping machine for applying tape to the seam of a folded box blank, means for moving the box blank through the machine, tape feeding and applying apparatus for applying the leading edge of tape to the leading edge of the seam and tape-cutting apparatus after length has been drawn and having a solenoid controlling the operation of tape-cutting apparatus.

Disposable Tissue Container and Support Therefor, L. Rome, Rutland, Vt. U.S. 2,564,997, Aug. 21. The combination of supporting panel, a container having an open bottom position on panel whereby the latter constitutes a bottom for the container, a package of disposable tissues positioned in container, said container including a top wall provided with a dispensing opening for tissue.

Filling Machine Having a Flexible Bag Enclosure With Spaced Ribs to Provide a Bag Support and Passageways Externally of the Bag, D. Ray, Beverly Hills, Calif. U.S. 2,565,045, Aug. 21. A vacuumizing and filling device for flexible normally collapsible bags comprising: a stationary housing portion having an open bottom and seat around said open bottom, a movable housing portion having an open top and an edge portion adapted to contact said seat.

Telescoping Box or Carton Having Interlocking Wall Elements, R. C. Stenger (to Sutherland Paper Co., Kalamazoo, Mich.). U.S. 2,565,053, Aug. 21. A box comprising a body formed of an integral blank comprising a bottom, side and end walls hingedly connected thereto, corner flaps hingedly connected to the ends of the end walls, side walls having slits opening at their end edges receiving the lower portions of the corner flaps when the parts are erected, corner flaps having

upwardly projecting tongues engageable with portions of side walls above slits.

Moisture-Vaporproof Pouch, J. W. Hutt (to Canada Foils Limited, Toronto, Ontario, Canada). U.S. 2,565,026, Aug. 21. A moisture-vaporproof pouch comprising a blank adapted to be folded transversely to form a pouch having front and back panels, blank having lateral extensions at each side.

Paper Feed Mechanism for Cup-Making Machines, P. E. Wixon and C. E. Chapman (to J. Shapiro). U.S. 2,565,162, Aug. 21. A plate over which a continuous strip of paper is fed, said plate having spaced grooves formed therein; a finger-operating shaft and finger-operating levers on shaft with paper engaging and perforating inserts in said fingers, adapted to project into the grooves in said plate.

Carton Construction, K. E. Maxon, Los Angeles, Calif. U.S. 2,565,182, Aug. 21. A carton involving: side and edge panels, edge panels being foldably connected to side and top extremities of side panel and having corners contiguous to a corner of side panel and when folded, having adjacent extremities; a bellows member foldably connected to the adjacent extremities of edge panels and having crease lines radiating from the contiguous corners of said panels.

Polygonal Box, C. D. Welshenbach (to Hinde & Dauch Paper Co., Sandusky, Ohio). U.S. 2,565,188, Aug. 21. In a paperboard box having a pair of diametrically opposite parallel side walls, a second pair of diametrically opposite parallel side walls disposed at right angles to the side walls disposed at right angles to the side walls intermediate the side walls disposed at right angles to one another to form a tubular body octagonal in transverse section.

Spacing Device for Shipping Cartons and the Like, N. Okon, Brons, N.Y. U.S. 2,565,146, Aug. 21. A spacing device for cartons comprising a carton having a bottom, a plurality of sheets of stiff material arranged horizontally and in superimposed and spaced relation within the carton, each of the sheets being formed with a plurality of stamped-out and downwardly bent tongues forming supporting legs for the sheet.

Apparatus for Making Paper and Like Bags, J. Nicholas (to E. S. & A. Robinson, Ltd., Bristol, England). U.S. 2,565, 258, Aug. 21. Apparatus for making paper and like block-bottom bags comprising feeding means for longitudinally moving and guiding a substantially flat bag tube horizontally.

Unitary Reinforced Folding Box, R. B. Worfford (to The Gardner Board & Carton Co., a corporation of Ohio). U.S. 2,565,288, Aug. 21. A one-piece blank for a folding box to be folded into flattended condition and to be set up for use,

comprising spaced top- and bottomforming panels, each having side-wall and front-wall forming portions.

Miniature Packet, L. Adler, St. Louis, Mo. U.S. 2,565,336, Aug. 21. A packet comprising a pair of opposed approximately flat sheets of differing characteristics, one of sheets being sufficiently more resiliently flexible than the other to return to its initially flat form after being bent, said sheets being secured together along an endless band so spaced to provide an inner pocket.

Machine for Forming, Packing and Sealing Containers, H. F. Waters, New York, N.Y. U.S. 2,565,444, Aug. 21. In a machine for manufacturing containers, means including plate adapted to form a continuous web into a plurality of longitudinal open accordion-pleated grooves and transverse heat-seal bars for continuously joined envelope sections

Bottle Carrier, C. L. Emrick (to Morris Paper Mills, Chicago, Ill.). U.S. 2,565,-449, Aug. 21. An article carrier comprising a pair of side walls, a bottom connecting opposed lower margins thereof and a multiple-ply handle disposed above said walls, handle comprising a pair of panels connected to upper margins of respective side walls.

Valve Bag, H. H. Orr, Cleveland, Ohio. U.S. 2,565,622, Aug. 28. A multiwall valve bag comprising an open-ended baglength of multi-ply paper tubing having re-entrant pleated side walls and front and back walls, a valve tuck formed in one corner of bag length, a flap of paper adhered to valve tuck and extending inwardly of tuck to provide a valve flap and a hinge seal for the open non-valved end of said bag.

One-Piece Reinforced Carton, R. Guyer (to Waldorf Paper Products Co., St. Paul, Minn.). U.S. 2,565,682, Aug. 28. A carton blank designed to form a tubular collapsible carton comprising a pair of sections, each section comprising an intermediate panel and a pair of side-wall panels foldably connected thereto along substantially parallel fold lines with closing flaps hingedly secured to certain of said panels.

Bottle Carrier, R. Guyer (to Waldorf Paper Products Co., St. Paul, Minn.). U.S. 2,565,683, Aug. 28. A bottle carrier including an inverted U-shaped handle and a generally U-shaped yoke secured intermediate its ends to each end of said handle, said U-shaped yokes lying on sübstantially a common plane and having generally parallel sides arranged with the sides) of one yoke substantially aligned with the sides of the other and free therefrom, a U-shaped tray supported between said sides.

Bag of Open-Mesh Material and Paper, C. V. Brady and A. F. Ottinger (to Bemis Bro. Bag Co., St. Louis, Mo.). U.S. 2,565,754, Aug. 28. A bag comprising a section of open-mesh bag material in the form of a band forming the upper part of the bag body with the upper edge of said band defining the mouth of the bag, an intermediate section consisting of two plies



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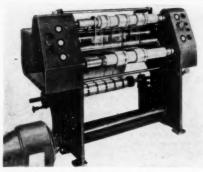


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U. S. patents digest

of paper in the form of a band forming an intermediate part of the bag body below the upper band.

Bottle Carrier, R. Guyer (to Waldorf Paper Products Co., St. Paul, Minn.). U.S. 2,565,810, Aug. 28. A bottle carrier including a pair of substantially U-shaped frame members arranged in opposed relation with the ends of the frame members in substantial alignment and a handle extending from one end of frame.

Lined Waterproof Container, R. T. Wriston, Phippsburg, Maine. U.S. 2,565,939, Aug. 28. A carrying case comprising a main section having upstanding walls and a lid section hingedly connected thereto and having depending walls, latch means for sections, U-shaped grooves formed on free edges, grooves being disposed in aligned registry when sections are secured together to form a channel and having a flexible lining for the main section and similar flexible lining for the lid section.

Formation of Articulated Containers, R. M. Bergstein, Cincinnati, Ohio. U.S. 2,565,944, Aug. 28. A process of producing articulated cartons from non-scorable sheeting which comprises first severing said sheeting along proposed lines of articulation in a carton body, plying to said sheeting a flexible material capable of serving as a hinge whereby to convert the lines of severance into lines of hinged articulation.

Labeling Apparatus, J. P. Lissimore, Dudley, England. U.S. 25,65,975, Aug. 28. In an apparatus for labeling articles wherein labels are extracted from a magazine with the aid of pneumatic suction applied through transfer members, moved by the latter to an adhesive-applying device for coating the labels with adhesive and then to a labeling station where they are delivered onto articles by pressure.

Packaged Unit for Article Handling, E. W. Van Patten, McLean, Va. U.S. 2,566,385, Sept. 4. A weighty package for economical shipment without the use of a pallet, consisting of a plurality of boxes arranged in juxtaposition to form a right prism, a first set of spaced-apart steel bands intimately disposed in parallel vertical planes about said prism to tie the boxes together in one direction and a second set of steel bands to tie together in the other direction.

Packing Box, E. M. Rose and R. W. Epps, Sanger, Calif. U.S. 2,566,500, Sept. 4. A box having rectangular spaced parallel wooden ends, a rectangular groove rabbeted inwardly and downwardly from the inner face of each of the end members near the upper edge thereof, a cover consisting of a plurality of normally flat resilient wooden rectangular cover members.

Merchandise Package, J. O. Krihwan (to Talon, Inc., a corporation of Pennsylvania). U.S. 2,566,667, Sept. 4. A merchandise package comprising an elongated panel having an aperture therein elongated in a direction longitudinally thereof, said panel having another relatively small



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U.S. patents digest

aperture arranged therein at a spaced dis-tance above elongated aperture to provide a bridge portion therebetween with a slide fastener disposed on the inner side of panel bridging both apertures.

Packaging Machine, T. Rapp, Los Angeles, Calif. U.S. 2,566,677, Sept. 4. A packaging machine including a stationary hopper having a bottom formed with a plurality of spaced openings, downwardly extending telescoping measuring and delivery tubes, each having one element secure in alignment with one of said openings. of said openings.

Rotary Sealer, J. M. Humphrey, New Richmond, Wis. U.S. 2,566,799, Sept. 4. In combination with a bag-sealing machine having a pair of opposed sealing rollers and means for driving said rollers, outpossible bag-feeding means for said rollers and means for cirving saud rollers, automatic bag-feeding means for said machine comprising a pair of arms mounted on said machine and extending outwardly therefrom at the level of said

Paper Receptacle, D. W. Gillespie (to Owens-Illinois Glass Co., a corporation of Ohio). U.S. 2,567,017, Sept. 4. A receptacle formed of sheet material and comprising a body having a front panel, a top panel having a flap depending therefrom behind front panel, lower portion of flap being upturned and forming a locking tab upturned in position to lie against the inner surface of front panel, said flap having a pour opening above

Method and Apparatus for Packing Flake Materials, E. H. Carruthers, Warrenton, Ore. U.S. 2,567,052, Sept. 4. A method of packing a predetermined weight of moist, flaky material in a container which comprises loosely filling a chamber with said materials, compressing said materials sufficiently to form a mass of substantially uniform density.

Container With Compressible Sealing Gasket and Pry-Off Cover, G. C. Erb (to American Can Co., New York, N.Y.). U.S. 2,567,196, Sept. 11. A container U.S. 2,301,130, Sept. II. A container for food products comprising a tubular container body having a lock and lap side seam, an outwardly bent false wire curl formed in one end of the container body in a lapped region of side seam, the double-layer thickness of the lap predouble-layer thickness of the lap pre-senting an offset surface in curl and ad-jacent body wall, a sealing ring of com-pressible material surrounding container body being in lapped region.

Sifter-Closure for Container Selectively Attachable Thereto in Dispensing or Non-Dispensing Position, S. F. S. Jones (to American Can Co., New York, N.Y.). U.S. 2,567,211, Sept. 11. A container having an elongated dispensing opening disposed between two plate elements for bulk removal of the contents of the container, said container having a plurality of sifter holes in one of said plate elements adjacent said dispensing opening for sifting the contents of the container.

Method of Packaging, E. D. Andrews (to Quaker Oats Co., Chicago, Ill.). U.S.

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Department 6

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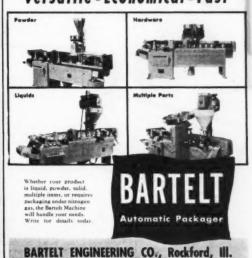


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Versatile - Economical - Fast





U.S. patents digest

2,567,267, Sept. 11. The method of packaging commodities comprising forming a four-sided inner sleeve from a relatively stiff material with open ends at the top and bottom of the sleeve, folding a sheet of transparent, water-vapor-resistant wrapping material about the four sides of the sleeve with the edges of the sheet in contact with the portions of the sheet projecting beyond the top and bottom of the sleeve, sealing the contacting edges of the sheet.

Wrapping Machine for Sandwiches and the Like, O. Sandberg (to Lynch Corp., a corporation of Indiana). U.S. 2,567,-405, Sept. 11. In a wrapping machine tor frangible articles a feed conveyor for articles to be wrapped, a ram for elevating an article from said feed conveyor, said table being adapted to receive a wrapper above said opening through which article and ram may rise.

Method and Apparatus for Packaging, F. M. Deutsch, M. Warzinik and A. M. Meier (to Marathon Corp., Menasha, Wis.). U.S. 2,567,598, Sept. 11. The method of packaging which comprises the steps of providing a stack of collapsed cartons folded in substantially flat condition having a tray portion and a hinged cover portion, feeding a series of successive individual cartons from said stack.

Pressure-Sensitive Adhesive Tape, E. O. Joesting (to Minnesota Mining & Mfg. Co., St. Paul, Minn.). U.S. 2,567,671, Sept. 11. Normally tacky and pressure-sensitive adhesive tape comprising a flexible backing and a firmly adherently bonded coating the eon of an adhesive consisting essentially of a blend of about 25-75 parts of natural rubber, correspondingly 75-25 parts of butadiene-styrene synthetic rubber and, based on 100 parts of a thermoplastic terpene resin of zero acid number and having a melting point of at least about 80 deg. C.

Moisture-Destructible Container, J. A. Hannum and J. N. Epel (to Hefco Laboratories, Detroit, Mich.). U.S. 2,567,766, Sept. 11. A moisture-destructible container for bulk material with a high moisture content comprising a wall portion made of a heavy blotting-paper stock that has a negligible wet strength, a coating of a glue sizing on the inner surface thereof to seal said surface against penetration and a thin frangible layer of unplasticized polystyrene over glue sizing to render inner surface moisture impervious.

Telescopic Shipping Carton, L. J. Rosenberg (to Gaylord Container Corp., St. Louis, Mo.). U.S. 2,567,786, Sept. 11. A substantially rectangularly shaped tall heavy-duty shipping carton consisting only of inner and outer similarly formed snugly telescoping rectangularly shaped one-piece sections, each section having interconnected oppositely disposed walls and right angular corners, the inner section being of greater length than the outer section, one corner of the inner section being vertically slit substantially to intermediate the ends thereof.



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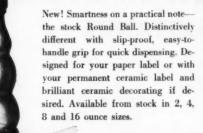
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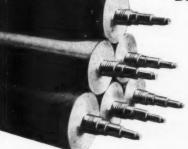
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Write FOR FREE WAX SAMPLES



Design factors—

(This article continued from page 134) instances. The correct bottle shape should be chosen if pressure-sensitive labels are to be employed, for although "cracking" as mentioned with paper labels is not encountered, the labels do take on a poor appearance after repeated flexure of the bottles.

At the time of this writing, one large-volume package employing a pressure-sensitive label, is just going on the market. In this instance, the package is small and although it is a "squeeze" package, the deformation of the bottle when squeezed is such that the label is not adversely affected. It might be added that the product being packaged is of a nature which requires an excellent quality of labeling.

The use of decalcomanias falls in the same class as paper labels. They have been little used, but they offer excellent opportunities for labeling and should be seriously considered.

Acknowledgments

The author is greatly indebted to the members of the Research, Development and Engineering Department of the Plax Corp., especially Mr. James Bailey, for assistance and helpful comments. Mr. R. P. Vuillemenot of Donald Deskey Associates, New York, (who have designed many significant polyethylene bottle packages) rendered valuable criticism and supplied many of the illustrations.

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(8) Ryan, William, "Sealing of Polyethylene," Modern Packaging, 23 (4), 133–137 (Dec., 1949).

(9) "Mechanized Squeeze-Bottling," MODERN PACKAGING, 24 (12), 68–70, 178 (Aug., 1951).

Dr. Lyon's

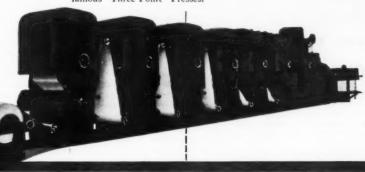
(This article continued from page 93) versity of Illinois Foundation, resulted from what has been heralded as one of the most significant developments yet made in the field of dental hygiene. Years of carefully controlled experiments indicated that chemical treatment of the tooth surface to harden the enamel would reduce decay. Such treatment was found to be especially effective for children.

Today, this treatment is applied by painting the teeth with a com-

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Tel.: Bridgeport 68-2250 New York City: LExington 2-2010 Boston: ARlington 5-8096 Agents in principal cities pound designed for application by dentists. An extension of the idea was to use a compound of di-basic ammonium phosphate carbamide in a dentifrice. This compound, however, has characteristics that make it hard to package.

Whereas moisture content is not highly critical in ordinary powder, the reverse is true when the powder is ammoniated. Dr. Lyon's employs a polyethylene cap as a closure on cans containing ammoniated tooth powder. Not only is this closure highly inert and therefore compatible, but it also tends to form itself to the contour of the neck of the can, thus giving a fairly practical seal against moisture.

A novel feature of the dark blue polyethylene cap is a small tab extending from the bottom edge of the cap. The tab was devised for use in premium promotions. Users tear off the tab and mail it to the company to avail themselves of premium offers.

The polyethylene closures are put on the cans by hand. These cans are not cartoned individually, but are packed in shipping cartons that employ nest-type dividers. A code number is stamped on the bottom of each can prior to filling. (Coding is done by machine on the individual cartons of regular tooth powder.) Control measures are necessarily more critical for the harder-to-package ammoniated product.

Cans for ammoniated powder are also oval shaped, but the background color is white, with copy and trademark in dark blue.

Advertising and promotion

Doctor Lyon started his advertising with the backing of a group of leading dentists, who helped him promote the powder with testimonials that "We do heartily endorse it as worthy of every dentist in the land." Advertising prior to Dr. Lyon's efforts had been pretty much a hurly-burly practice and certainly nothing on which to build a reputation for brand name and trademark or package.

Illustrative of the highly ethical character of the doctor's advertising were public statements he made deploring contemporary dentifrice advertising at a time when there was no law to prevent manufacturers from making exaggerated or even fraudulent claims.

The doctor, with his honest approach, found the going slow at first. For years dentifrice manufacturing was little more than a sideline for him. In 1866 he sold \$211 worth of "cakes." In 1874 his sales records showed \$400 for tablets and \$600 for tooth powder. By 1895 the figures were: powder, \$63,000; tablets, \$2,000. But by 1905, tooth-powder sales mounted to \$405,000 and the dentist was definitely in the dentifrice business.

As advertising and sales made further strides, the doctor's sons carried on in the pioneer tradition. Their own efforts and contributions were largely in the early radio days. As early as 1926, Dr. Lyon's Tooth Powder was sponsoring programs. The first of the programs was called "Roaring Lyon's," an orchestra described on drug store counter cards as broadcasting daily "a program of breakfast time music—Let's Start the Day Right." Four stations, including WEAF in New York, carried the program.

Lyon's went into network programs in 1931 with the "Manhattan Merry Go Round," a leading program, continuing its sponsorship until 1950.

Currently the tooth powder is being advertised extensively on radio and television. The ABC network carries "The Album of Familiar Music" and "My True Story." NBC carries "Young Widder Brown." CBS carries "Pursuit." MBS carries "Ladies Fair." ABC-TV carries "Mystery Theatre" and CBS-TV carries "Songs for Sale."

For years Lyon's continued to build sales on the theme "Do as your dentist does, use powder." Today, the basic theme is "Nothing cleans like powder." The doctor himself might have written these themes. Were he alive today, he might be surprised that his original principles in packaging and promotion had survived so well, but it would certainly cause him no amazement that his product continues to be successful. He believed undeviatingly there was a market for a dentifrice that performed no miracles—just cleaned teeth.

CREDITS: Metal cans and closures, Continental Can Co., New York. Polyethylene closures, Owens-Illinois Glass Co., Toledo. Individual cartons, American Coating Mills, Dio., of Owens-Illinois Glass Co. and General Carton Corp., Brooklyn. Shipping cartons, The Hinde & Dauch Paper Co., Sandusky, Ohio. Filling machines, U. S. Automatic Box Machinery Co., Boston. Capping machines, Urbana Tool & Die Co., Urbana, Ohio. Cartoning machines F. B. Redington Co., Chicago. Bundling machines, Package Machinery Co., Springfield, Mass. Case sealers, F. L. Ferguson Co., Joliet, Ill.

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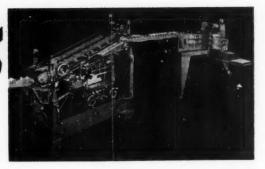


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Saddling the bag

(This article continued from page 105) bels to both cellophane and acetate bags by heat sealing, although a stapler may be used if desired. The label paper has a special coating which is said to give firm adherence to either cellophane or acetate when passed through a conventional rotary heat sealer.

Under optimum conditions the heat sealing of the bag top and the application of the label would be a single operation. But for the present, until operators gain greater dexterity in gathering and smoothing the bag top to receive the label, American Stores is conveying its packages first through a bag sealer, then to the label machine and finally through a second heat sealer to attach the label to the bag.

The new label imprinter makes it possible to use one standard label for all kinds of produce packaged in bags. Consequently, inventory controls for a wide variety of labels and bags are not required. American Stores achieves maximum economy by making its own bags from roll-stock material.

While costs have not been analyzed completely, a preliminary estimate indicates that the total saving on the new operation will lie between \$2.50 and \$3.75 per 1,000 bags, or \$1.00 to \$2.00 cents per package, according to Mr. Cupp.

Interest in the new labeling method has not been limited to the pre-packagers, but extends to any field where saddle-labeled transparent bags are or could be used. This would include such food products as baked goods, confections and potato chips; hardware products such as nuts, bolts, screws, washers, etc., and notions items such as shoulder pads, dress shields, etc.

In many of these instances the same factors that American Stores found advantageous in this type of package—maximum product visibility, design and color interest concentrated in the label, and low cost—will demand consideration.

CREDITS: Label imprinter developed and manufactured by American Tag Co., Belleville, N. J. Labels, American Tag Co. Heat sealers, Amsco Packaging Machinery, Inc., Long Island City, N. Y. Bag-making machine, Simplex Packaging Machinery, Inc., Oakland, Calif.





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It is rugged—High capacity roller bearings and heavy duty construction throughout reduces down time and maintenance to a minimum.

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Available—embossing machines by Dilts for paper, board, foil, or film, with rollers of steel-paper, steel-rubber or matched steel as required by the job.

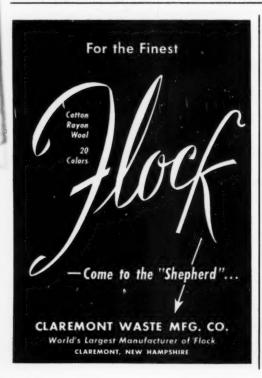
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Division of The BLACK-CLAWSON COMPANY, Hamilton, Ohio

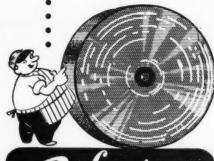
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Mechanized for crackers

(This article continued from page 99) on the top of the two end flaps and along the front edge of the top flap. Folding blades then fold the end flaps down and tuck the top flap in position, after which the boxes, without loss of motion, make a 90-deg. turn and pass through a compression unit which presses them firmly between moving belts until the adhesive sets.

Upon leaving the compression unit. the boxes are discharged upon a table where one operator stacks them in groups of six while another bundles them in kraft wrapping paper, sealing the packages with gummed tape.

The tape-dispensing machine used in connection with this operation is equipped with a compact printing device which code dates each strip of tape as it is taken from the machine and also prints a description of the package contents, such as "½ doz. 8 oz. Charm sodas." The printing device, which is essentially a roller with rubber type, is actuated each time that the regular operating lever of the tape dispenser is pressed down.

The continuous carton-closing machine installed by Johnston, which made it possible to eliminate the former cellophane overwrap and still provide an attractive, tightly sealed

package highly resistant to shipping and shelf damage, normally operates at speeds between 30 and 45 packages per minute on the Johnston cracker line. The unit, requiring a floor space only 7 ft. by 20 in. and used in conjunction with a compression unit 20 ft. long, will close either lined or unlined cartons and has an operating range between 30 and 120 packages per minute. Smooth, continuous flow and silent operation are among the important features of this unit. In addition, the machine is equipped with simple dual controls which permit quick adjustment for various carton sizes without the need for extra parts. Similar units are to be placed on the other two John ston lines in the near future.

CREDITS: Package design, Brooks Stevens Associates, Milwaukee. Cartons in 1/2-lb. and 1-lb. sizes supplied by, and automatic carton-forming machinery (Kliklok) leased from, Sutherland Paper Co., Kalamazoo. Mich. Two-lb. cartons, Cornell Paperboard Products Co., Hummel & Downing Div., Milwaukee. Cellophane, Du Pont. Wrapping machines for 4-lb. inner packs, pin-type automatic loading devices, collecting and accumulating conveyors and carton conveyors, Battle Creek Bread Wrapping Machine Co., Battle Creek, Mich. Continuous carton-closing and gluing machine and compression equipment. Peters Machinery Co., Chicago.

labels tags seals wraps indivisualized labeling For all seasons throughout the packaging year. Call CAMED today for labeling that is both informative and distinctive. Labels and Seals nulli-caiar printed embossed gold & silver foil pressure sensitive Distinctive Tags DIE AND LABEL COMPANY 156 WEST 14th STREET OR 5-0228

† For a description of another tape-printing device, see "Personally Attested," MODERN PACKAGING, Oct., 1950, p. 96.

Methods of rating film durability

(This article continued from page 131) from 2 meters were used.

It is known that changing the specimen clamp size in relation to the ball size will affect the results, inasmuch as the measured impact strength varies directly with both of these factors. The maximum available height (2 meters on this instrument) was used to provide the maxi-mum range of measurable impact strengths (0-200 Kg.cm.). No significant changes of impact strength with velocity have been noted over the small range of velocities afforded by this instrument. Statistical treatment of impact data has indicated that the mean of 10 values is reproducible to ± 10%, 95 times out of 100.

The measurement of the force re-

quired to extend a tear in thin, low-tear-strength films, especially cellulosic films, has been accomplished by adaptation of the Elmendorf tearing tester to allow measurement of the relatively small forces involved. It was desired that the sensitivity of the instrument be great enough to permit measuring the tearing force for a single sheet of film.

The cellophane single-sheet tear tester (Fig. 4) consists of a stationary jaw and a movable jaw mounted on a light pendulum. The pendulum swings on a ball bearing which was carefully selected to provide minimum friction and maximum reproducibility of pendulum swing. A lightweight indicating rider provides the means for registering the maximum are through which the pendulum has



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moved. Auxiliary weights have been provided for the pendulum so that the ranges 0-15, 0-30 and 0-90 grams are available.

The method of testing is essentially that described in A.S.T.M. D-689 (2) and T.A.P.P.I. T414 m49, (3) using the Elmendorf tearing tester. The specimen size used with our instrument is 2 by 2½ in., with an initial cut ½ in. long at the midpoint of one 2-in. side, making the length of tear 2 in.

In Table IV are reproduced a set of data typical of those obtained with this tear-test instrument. To obtain a mean result reproducible to \pm 10%, 95 times out of 100, no more than 10 specimens need to be tested.

TABLE IV—TEAR STRENGTH OF A REGENERATED CELLULOSE FILM

Test conditions: 75 deg. F., 35% R.H. (Tear made parallel with the machine

direction o	f the film)
4.8	4.7
4.8	4.7
4.7	4.6
4.9	4.5
4.6	4.5

Mean tear strength $\overline{X} = 4.68$ grams Standard deviation s = 0.126 grams

Coefficient of
$$\left(\frac{9}{\overline{X}} \times 100\right) = 2.68\%$$

The scope of the work in this laboratory on film physical properties in relation to package durability has included the measurement of such other film properties as tensile strength, elengation, folding endurance, stiffness, impact-fatigue and impact strength after various controlled damaging treatments. Of all of these tests, considered singly and in combinations, the three discussed in this paper have been most useful in predicting the actual performance of the package.

References

- 1. American Society for Testing Materials 1949 Book of Standards, Part 6.
- 2. American Society for Testing Materials 1949 Book of Standards, Part 4.
- Tentative and Official Testing Methods of the Technical Assn. of the Pulp & Paper Industry.

(In a sequel to this article, next month, Mr. Flierl and V. L. Simril will discuss the correlation and use of these tests to predict the durability of film materials in specific packaging applications.)

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NOVEMBER 1951

Protective Packaging Competition prize winners

Awards were presented in Cleveland, Ohio, last month by the Society of Industrial Packaging and Materials Handling Engineers to the winners of the society's sixth Annual Protective Packaging Competition for the best designed and best engineered packages submitted by packaging engineers. In addition to prizes in different group classifications, two special honorary awards—the Harold Jackson Trophy and the Irving J. Stoller Award—were presented.

Following is the list of prize and award winners:

Group I—Corrugated or Solid Fibre Boxes: First prize, W. E. Christopherson, Douglas Aircraft Co., Inc., Santa Monica, Calif., for C-47 and R4D fire prevention kits. Second prize, T. E. Richards, Morse Chain Co., Ithaca, N. Y., for roller chains. Third prize, Irwin M. Rehm, RCA Victor Div. of Radio Corp. of America, Lancaster, Pa., for 829B small power tubes. Honorable Mention: Irwin M. Rehm, RCA Victor Div. of Radio Corp. of America, Lancaster, Pa., 8D21 television transmitting tube; William M.

Ward, Pontiac Motor Div., GMC, Pontiac, Mich., Torus cover assembly 8611257; A. A. Langen, Oliver Corp., Battle Creek, Mich., sickle guard assembly; Rudolph M. Heckmann, International Harvester Co., Tractor Works, Chicago, tractor radiator core; David A. Williams, Perfection Stove Co., Cleveland, Ohio, 1036 Perfection electric range; Evan M. Shufeld, American Hard Rubber Co., Akron, Ohio, X-ray developing tank.

Group II—Nailed Wood Boxes and Crates: First prize, Herbert H. Lemmerman, Airco Equipment Div. of Air Reduction Co., Inc., Jersey City, N. J., Airco Monograph, Oxy-Acety cutting machine. Second prize, H. J. Kettleborough, Congo Engineering Works, Mendota, Ill., for oil-fired packaged furnace unit. Third prize, Elmer Rarity, J. W. Martin & Sons, Salinas, Calif., for crates.

Group III—Wirebound Boxes and Crates: First prize, Earl Forsberg, Ohio Chemical & Surgical Equipment Co. Division of Air Reduction Co., Inc., Madison, Wis., for hospital sterilizer. Second prize, Ralph Solomon, Samuel Stamping & Enameling Co., Chattanooga, Tenn., for dualwall gas heater, 45M BTU vented wall heater.

Third prize went to R. W. Morey, J. I. Case Co., Bettendorf, Iowa, for rote cleaner. Honorable Mention: Malcolm C. Downs, Jr., American Locomotive Co., Schenectady, N. Y., Diesel engine cylinder heads; Robert H. Bakewell, Leland Detroit Mfg. Co., Detroit, Mich., Leland "Terra-Tiller" garden tractor and implements; Glenn Davis, American Machine & Metals, Inc., East Moline, Ill., Fan-Pac dairy barn ventilator; Charles B. Denniston, Airtherm Mfg. Co., St. Louis, Mo., H-270 unit heater; Ed Kolk, Liquid Carbonic Corp., Chicago, 90-mm. small ammunition storage boxes; Frank M. Syre, Federal Enterprises. Inc., Chicago, sign (electrical).

Group IV—Cleated Panel Boxes: First prize, Gale C. Cunningham, North American Aviation, Inc., Los Angeles, Calif., for F-86 airplane "wing flap." Second prize, E. R. Heil, Windermere Storage & Moving Co., Inc., Cleveland, Ohio, for carrying



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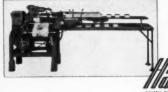
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dresses, coats, suits, etc., on hangers.

Group V-General: First prize, William M. Ward, Pontiac Motor Div. of GMC, Pontiac, Mich., for rear bumper impact bar 513925. Second prize, Martin A. Westerlund, Peninsular Metal Products Corp., Detroit, Mich., for windshield molding.

Group VI-Export Packages: First prize, C. R. Gustafson, American Radiator & Standard Sanitary Corp., Louisville, Ky., for brass plumbing fittings. Second prize, Gale C. Cunningham, North American Aviation, Inc., Los Angeles, Calif., for T-6 trainer airplane (scale model). Third prize, Henry H. Kelly, Westinghouse Electric Corp., East Pittsburgh, Pa., for stationary contacts. Honorable Mention: Gale C. Cunningham, North American Aviation, Inc., Los Angeles, Calif., T-6 radio compass; Rudolph M. Heckmann, International Harvester Co. Tractor Works, Chicago, track roller and shaft assembly; Gordon A. Meyer, Stromberg Carlson Co., Rochester, N. Y., television receiver.

Group VII—Materials Handling: First prize, Robert F. Sanford, A & R Lettuce Co., Salinas, Calif., for drypack lettuce. Second prize, S. S. Beekman, International Harvester Co. of Springfield, Ohio, for truck cabs.

Special Awards: The Harold Jackson Trophy for the best method of cushioning against shock and breakage (with particular reference to exports of radio, television and other electronics) was won by Gale C. Cunningham, North American Aviation, Inc., Los Angeles, Calif., for a T-6 radio compass package. Winner of the first award in Group I-W. E. Christopherson of Douglas Aircraft Co.—won the Irving J. Stoller Award for best interior packing for C-47 and R4D fire prevention kits.

The competition is held annually by the Society of Industrial Packaging and Materials Engineers in conjunction with its Packaging and Materials Handling Exposition.

Fluid on wheels

(This article continued from page 103) is used to connect the bottom outlet of the tank to the suction side of the filling-machine pump. Sanitary-type stainless steel piping and fittings are used to complete the connection between pump and tank.

The type of pump used for this operation varies with the viscosity, density and chemical and physical properties of the material to be pumped.

Stainless steel rotary-type pumps driven through a variable pitch sheave are used on most lines. The vari-pitch sheave is manually adjusted to operate the pumps at the normal filling rate of the packaging line. A float control device on the tank at the filling machine controls the motor operating the pump. Rubber rotary pumps are used where metal contamination is to be avoided. A few high-speed lines are equipped with rotary vacuumatic-type fillers. These lines are adequately supplied by the 1,000-gal.-size portable tanks.

CREDITS: "Worksaver" fork truck, The Yale & Towne Mfg. Co., Philadelphia, Casters, Service Caster & Truck Corp., Albion, Mich. Rotary-type pumps, Jabsco Pump Co., Beverly Hills, Calif. Tanks, Glascote Products, Inc., Cleveland, Ohio, and The Pfaudler Co., Rochester, N. Y. Rotary vacuum filler, U. S. Bottlers Machinery Co., Chicago.



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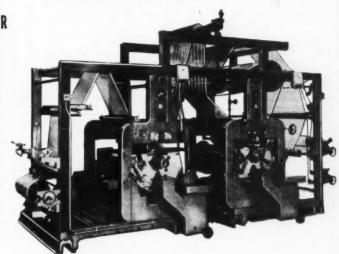
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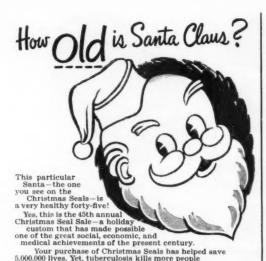
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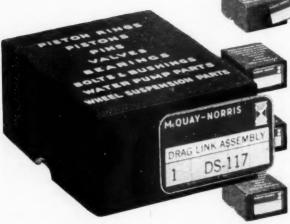
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